WEST MARKETING ISSUE
Pages 9-16

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NAC Told of Promising New Areas for Pest Control; Financing, Education Talks Heard

SAN FRANCISCO—An outline of the industry's economic situation, the existence of a huge untouched potential market for the trade and talks covering financing and manpower for the development of future trade featured the first day's meeting of the National Agricultural Chemicals Assn. spring meeting at the Fairmont Hotel here March 6.

The meeting continued through the remainder of the week, with the final session being held March 8. Registration exceeded 300.

Fred W. Hatch, Shell Chemical Corp., New York, president of the association, declared in his presidential address that the regulations for safe use of pesticides now established by the Food and Drug Administration are working out to the benefit of all concerned.

"Agricultural chemicals," Mr. Hatch said, "are in many cases essential to saving an important food crop from total destruction. As a result of work by private industry and government agencies, insecticides have been carefully evaluated to determine the extent to which they can be used without hazard. This should silence once and for all alarmists who have suggested that insecticides used on crops are dangerous to the consumer."

In estimating current sales of the industry at $250 million a year, Mr. Hatch predicted continuing sales expansion in the future. To help secure this, he recommended additional sales training at all marketing levels, from manufacturer through the dealer.

He particularly urged that all industry customers be fully acquainted with information on the safe use of pesticides.

Mr. Hatch, manager of agricultural chemical sales for Shell, said the farmers of this country are caught in a serious cost-price squeeze from which greater use of chemicals can help them to escape.

He discussed the problem of some

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ittle New Seen n President's routh Message

Responsibility of States in Relief Program Stressed

By JOHN CIPPERLY
Croplife Washington Correspondent

WASHINGTON — The President's outh program message to Congress roduced nothing new in the prob- n or the means to its solution. The message, following the highly blicized drouth area inspection r after the President's inaugura- n, is discerned here as a hollow e in which he emphasizes the im- tance of state responsibility for uth relief programs. The message s upon state governments, in leg- tion still to be submitted to Con- ss, to contribute 25% of the cost id which would be provided by federal government. Administra- of such programs is not spelled in the White House message. e contributions may mean that would take over the entire ad- istration of drouth aid. e message of the White House Congress is supported by an en- re from Ezra Taft Benson, sec- y of agriculture. He says in

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Federal Quarantine Favored to Stop Witchweed Spread

WASHINGTON — Farmer representatives from eight counties in North Carolina and South Carolina, where witchweed has been found, went on record as favoring a federal quarantine at a meeting here recently.

This meeting was the second and final session of a hearing initially convened on Jan. 30 to consider establishment of a federal quarantine to prevent the spread of witchweed from known infested areas in the Carolinas.

A committee of eight farmers, one from each of the affected counties—four in North Carolina and four in South Carolina—presented a statement at the hearing endorsing a federal witchweed quarantine in the interest of their own and other states. They urged, however, that regulatory action under the quarantine be confined to areas actually infested with the parasitic weed.

Representatives of the Virginia Department of Agriculture and agricultural experiment station also attended the hearing, and statements from officials of 10 other states and from the central, eastern, and national plant boards, all favoring the quarantine, were placed in the rec-

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otential for Fertilizer and esticide Use Emphasized t Western Cotton Conference

By LAWRENCE A. LONG
Editor of Croplife

PHOENIX, ARIZ.—A great potential for the use of additional amounts of rbicides, insecticides and fertilizers was described by speakers at the West- Cotton Production Conference held here March 4-6. The conference, at- ded by more than 500, was sponsored by the Southwest Five-State Cotton owers Assn. and the National Cotton Council of America, in cooperation th the land-grant colleges, the U.S. Department of Agriculture and other ups, including vocational agriculture and farm organizations. Local host s the Arizona Cotton Growers sn., with meeting headquarters at Westward Ho Hotel.

K. P. Ewing, in charge of the cot- insect section of USDA, Belts- le, Md., discussed the problem of d-to-kill insects, saying that al- ugh many of the insects which in- t cotton are now harder to control, all of such pests are resistant, d then only in some areas.

"As far as I know, there are no in- ations that the bollworm, a major t in this area, has become resist-

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$1.1 Million Procurement Order for Fertilizer Plant Equipment Issued

WASHINGTON—The International Cooperation Administration issued on March 6 a procurement order covering equipment for the Taiwan Fertilizer Factory. Value of the order is $1,106,200.

Taiwan requires chemical and chemical preparations with a total cost of $25,000; non metallic minerals and non metallic mineral products, $100,000; electrical apparatus, $130,000; industrial machinery, including office machines, appliances and parts valued at $826,200, and scientific and professional instruments for $25,000.

The buyer is Hydrocarbon Research, Inc., 115 Broadway, New York. ICA states that it does not have the full details of the requirements and suggests that American firms interested in the business should communicate directly with the buyer, marking their letters for the attention of E. D. Miller, purchasing agent.

Tolerances Set for Ethylene Dibromide

WASHINGTON—The Food and Drug Administration has established a tolerance of 10 parts per million for residues of inorganic bromides (calculated as Br) in or on the following commodities that have been fumigated with ethylene dibromide in accordance with the Mediterranean fruit fly control program or the quarantine program of the U.S. Department of Agriculture:

String beans, bitter melon, Cavendish bananas, citrus fruits, cucumbers, guavas, mangoes, papayas, bell peppers, pineapples and Zuccini squash.

Soybean Nematode Discovered in One Arkansas County

WASHINGTON — The Arkansas State Plant Board and the U.S. Department of Agriculture announce that the soybean cyst nematode has been found in one county in northeast Arkansas.

Arkansas thus becomes the fourth state in which this parasite has been discovered since its first appearance in the U.S. 2½ years ago. Two counties in North Carolina and one each in Tennessee and Missouri are also known to be infested.

Identification of the soybean cyst nematode in Arkansas was made in soil samples collected in Mississippi County in the northeast corner of the state.

This finding of the pest was a result of the comprehensive nematode survey now getting under way throughout the Mississippi River Valley. The survey was begun after discovery of the nematode late last year in Lake County, Tenn., and in Pemiscot County, Mo., just across the Mississippi River.

As weather conditions permit, the cooperative State-Federal search for the nematode will be extended in principal soybean-producing states to determine the pest's distribution.

CHINCH BUG BUILD-UP HEAVY

Bad Hopper Year Shaping Up, Kansas Pesticide School Told

By Martin E. Newell
Manager, Croplife Southwestern Office

MANHATTAN, KANSAS — A big build up of grasshoppers and chinch bugs in Kansas is expected this year, D. E. Gates, extension entomologist, told the Kansas Pesticide Dealer and Custom Applicator Conference at Kansas State College here Feb. 26. Several years of drouth have intensified the grasshopper situation which now equals the bad years of the thirties, he said.

The worst grasshopper areas are two sections of south central Kansas, plus a north central area and the extreme northwestern tip, but nearly all of the central part of the state is in a threatening situation and the eastern section is expected to be more heavily infested than last year.

Eastern Kansas will have a heavy chinch bug infestation this year, Mr. Gates indicated. Other sizeable threats to crops from insects, includes a possibility of severe damage to wheat in the western counties from the pale western cutworm (a bad actor in 1956) false wireworms in the central areas and spotted alfalfa aphids in the southern tier of counties. The aphid did a lot of alfalfa damage last year, particularly in the first cutting in areas where the insect overwinters and starts feeding before ladybird beetles are active.

The ravages of plant parasitic nematodes in Kansas are considerable, O. H. Elmer, plant pathologist, Kansas State College, told the meeting.

The full extent of losses from this cause are not fully known, he said, but nematodes can "cause a lot more damage than we realize," Prof. Elmer said. Kansas pesticide dealers will have to give more service in combatting these pests in the future, he predicted and cited many instances where low yields were spectacularly improved by soil fumigation for nematodes.

There is a great need for simple effective applicators for field use, with which desired dosages of nematicides can be applied uniformly and which can be depended on to deliver continuously, he declared.

Mr. Gates also presented the detailed state recommendations on chemical control of insects for 1957. In this connection he mentioned that one place where chinch bug control often fails is in poor timing in spraying both barrier and fields. This mu be done while there still are so green plants in the small grain fiel He also said that with the increa in irrigation in Kansas the fall arm worm is going to become a mo important pest.

In a question and answer period, was brought out that the college s little value in flame-burning alfal fields infested with the spotted aph Tests have shown that the kill is n complete, missing the aphids that a shielded in the crown of the pla It also forces plant growth unna urally thereafter, which also is dan aging.

A good deal of discussion center around treatment of grain sorghu fields, since that crop is increasing the western areas where acreage a lotments of wheat have been c back. Mr. Gates said that the soil pe complex is much more important sorghums than ever realized in t past, in pointing out the values seed treatment. Chinch bug is th mid-season threat and should be co batted in the same way as in th case of corn. Mr. Gates expressed th opinion that the ease with whi grasshoppers are killed these da has made many pest control applic tors careless with their spray cal brations, and consequently they d not get proper results with tough insects because of the faulty rates application.

Since sorghums can be damaged b 2,4-D, this chemical should be use carefully in weed control, W. M. Phi lips and L. E. Anderson, of the co lege staff, said. Both men emphasize that injury may result from trea ment when the plants are less tha three inches or more than 12 inch tall. Rates of ¼ to ½ lb. per ac were suggested. Some injury wou be likely at application rates high than ½ lb. Mr. Phillips said an o mix should be avoided as it may bur the leaves. In answer to a questio as to whether drop nozzle sprayi at low levels might avoid some these troubles, it was pointed o that about half the spraying of so ghums in Kansas is done by plane a that, in any event, the sorghum ro are too close together for good trea ment this way.

There is a great interest in chem cal drying of sorghums in the fiel it was revealed, but the college e perts were rather dubious of the us fulness of such treatment. Because FDA regulations, only grain destin for seed may be thus treated. Al the Kansas experiments have sho much less effect in drying the he than the foliage. The college men r ported that the chemicals were n much more successful in penetrati to the interior kernels than was th great drier, the sunshine.

Other topics discussed at the one day meeting were safety in han dling chemicals, methods of prope sprayer calibration and adjustmen control of insects by non-chemica means and functions of countr weed supervisors.

About 200 were present at t meeting which was sponsored by t Kansas State department of ent mology, in cooperation with the d partments of agronomy, botany a plant pathology, agricultural en neering, extension service and t USDA Agricultural Research Servi

WEED CIRCULAR

FARGO — North Dakota Agricu tural College's extension circul "Chemical Weed Control in Fi Crops," A-253, has been revised by A. Jensen, extension agronomist a Dr. E. A. Helgeson, experiment st tion botanist. The circular lists re ommendations based on studies co ducted by the Research Committee the North Central Weed Control Co ference and the North Dakota E periment Station. Chemicals and a plication rates are given for sm grains, corn, flax, soybeans grass, fo ages and sugar beets.

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RALEIGH, N. C.—*804 St. Mary's St.*
SALT LAKE CITY, UTAH—*68 South Main*
SPOKANE, WASH.—*521 E. Sprague*
ST. LOUIS, MO.—*4251 Lindell Blvd.*
TAMPA, FLA.—*3737 Neptune St.*
TULSA, OKLA.—*1708 Utica Square*
WICHITA, KAN.—*501 KFH Building*

Dr. Arthur M. Smith

r. Arthur M. Smith o Head NH3 Program or Olin Mathieson

LITTLE ROCK—Dr. Arthur M. mith, assistant to the vice president, ll be responsible for the direction the anhydrous ammonia program the Plant Food Division, Olin athieson Chemical Corp., it has en announced by S. L. Nevins, vice esident. His headquarters will be Little Rock, Ark.

The Plant Food Division sells anhydrous ammonia as a direct application nitrogen fertilizer through dealers operating bulk stations. It also lls wholesale quantities to fertilizer ixers. Dr. Smith has been associated with the program in executive pacities since he joined Olin Mathieson in 1948.

avidson-Kennedy orms New Engineer, ontractor Firm

ATLANTA — Davidson-Kennedy ., 69 year old Atlanta manufacring firm, has announced the foration of Davidson-Kennedy Assoates. The new firm will act as an gineer-contractor and will carry t the design, procurement of uipment and materials, and erecon of chemical process plants and cilities. President of the new firm Thornton Kennedy, also president Davidson-Kennedy Co. Offices will in Chicago and Atlanta.

Although the new firm will funcon independently of Davidson-Kenedy Co., it will complement the xisting manufacturing facilities, r. Kennedy said. "As we begin our th year of business," he said, "we e able to offer complete turnkey rvice to chemical processors. Enneering, plant design and construcon will be furnished by Davidsonennedy Associates Co., equipment ll be furnished on a bid basis by avidson-Kennedy Co. and other ppliers."

Heading up the Chicago office of e new firm are James Iliff, former law-Knox Co., chemical plants dision chief process engineer, and ex Wingard, former Blaw-Knox ., Midwest headquarters project gineer. Chicago offices are located 2623 Chicago Road, Chicago eights, Ill.

PILOT CLEARING HOUSE

FRESNO, CAL.—The Agricultural rcraft Association Inc., of Fresno nounces the creation of a clearing use for pilots and operators to be aintained in the headquarters of the sociation at Chandler Field. Wilm D. Austin, executive secretary the association, acting under direcn of the Board of Directors, has t up a file on all pilots looking for rk as well as operators who need ots.

NPFI Announces Projects for Three Western States

WASHINGTON—Dr. Russell Coleman, executive vice president of the National Plant Food Institute, has announced Institute-sponsored projects with educational institutions for three western states "designed to focus attention on the importance of using fertilizer more efficiently."

The projects are:

Washington — Production of a leaflet by the Institute in cooperation with Washington State College, entitled "Soil Testing Is Good Business." Copies of this leaflet are being made available gratis to the college for distribution by the state extension service through dealers and county agents.

Oregon — Production of a large, color poster (17x22") by the Institute with the advice and assistance of Oregon State College, focusing attention on soil testing and the proper use of fertilizer. Distribution will be made by the college. The poster is designed to be displayed in the offices of fertilizer dealers, county agents, federal agricultural workers and others.

California—The Institute has completed arrangements with the Bureau of Agricultural Education, California State Department of Education, for a $1,500 fellowship at the California State Polytechnic College. The recipient of the fellowship will devote his efforts to developing subject matter materials and teaching plans dealing with fertilizers and fertilizer use. The findings later will be printed and distributed to teachers of vocational-agriculture in the state.

IRRIGATION CLINIC

BROOKINGS, S.D.—The fourth annual irrigation clinic will be held at South Dakota State College March 15.

Flo-Mix Fertilizers Forms Home Division

HOUMA, LA.—The Flo-Mix Fertilizers Corp. has announced the formation of a home division for the purpose of selling Flo-Mix liquid fertilizers to the home owner.

The Flo-Mix fertilizer is a balanced liquid fertilizer that contains 15% nitrogen, 10% phosphorus and 5% potash. It is being sold in ½-gallon bottles of concentrate for application to lawns through a garden hose, and in 12-oz. and 6-oz. plastic squirt bottles for use on house plants.

STATION ANNIVERSARY

GENEVA, N.Y.—March 1 marked the 75th anniversary of the organization of the New York State Experiment Station at Geneva. A unit of Cornell and the State University, the station plans to mark the anniversary by special events throughout the year.

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WESTERN CONFERENCE

(Continued from page 1)

ant to insecticides in this country," Mr. Ewing said. "There are, however, such reports from South America."

According to experiments and experiences of entomologists and farmers in Arizona, the salt-marsh caterpillar, cotton leaf perforator, cabbage looper and lygus bugs in certain areas have become harder to kill by the toxaphene-DDT mixture that gave good control of the insects until 1954, Mr. Ewing said. According to reliable reports, only Maricopa County and portions of Pinal and Yuma counties in Arizona are definitely involved in this resistance, he said.

Mr. Ewing cited a report from Dr. Hal Reynolds of California that two pests of cotton—the Pacific and strawberry spider mites—showed resistance for the first time this year in that state. Dr. Reynolds has emphasized that to date resistance of these two insects is localized in area.

"I would like to emphasize that resistance is localized and has developed only in certain insects against specific insecticides," Mr. Ewing said. "State and county advisers know pretty well what insects are resistant to different insecticides and are able to recommend alternate materials which will give control. Therefore, growers should rely heavily on their county agents and extension entomologists for advice along this line."

Before resistance is blamed for failure to get control, Mr. Ewing said the grower should make certain that 1) the insecticide used is recommended by the extension entomologist and the county agent for control of the particular pest, 2) that it was properly formulated at the recommended strength of dust or spray, and 3) it was properly applied at the recommended dosage.

Expanded Research on Resistance Problem Asked

Mr. Ewing said that most of what has been done to combat this problem so far is of a stop-gap or short-range nature. Expanded research is needed to discover the nature and causes of resistance and to work out a permanent solution.

A host of pests prey on cotton seedlings during the early part of the season and these must be controlled if a good stand is to be preserved, J. N. Roney, extension entomologist at the University of Arizona, told the group.

He said that early season insect control is of particular importance in all of the western irrigated cotton areas. Pests include thrips, cutworms, beet armyworms, wireworms, darkling ground beetles, aphids, mites, grasshoppers, cotton leafhoppers and seed corn maggots.

"Many times some of these insects could destroy the young cotton if they were not controlled," the entomologist said.

Different insecticides and different conditions for starting controls are used in the five states, Arizona, California, New Mexico, Nevada and Texas, surveyed by Mr. Roney.

Among the insecticides being used in the states are DDT, toxaphene, aldrin, dieldrin, heptachlor, endrin, parathion, malathion and thimet.

The entomologist said the use of systemic looks promising, and workers should have more definite answers after another year.

A need exists for more research on control of certain of the early season insects, Mr. Roney said.

The economic importance of losses caused by seedling diseases in cotton is surprisingly high, it was pointed out at the meeting. The average annual loss from seedling diseases of cotton during the past five years in the Southwest is estimated at more than 342,000 acres—almost as great as the total number of acres harvested in Arizona, according to Dr. Harold W. Reynolds, nematologist at the Cotton Research Center, Tempe, Ariz.

Dr. Reynolds said the figures show an annual loss to the Southwest of approximately 228,000 bales or an estimated $34 million. And there are still other losses which are of considerable economic importance.

For example, he said, more man and tractor hours and additional seed and water must be expended when it is necessary to replant cotton to secure a satisfactory stand. Also, both high yields and quality often are sacrificed with late planted cotton, particularly in years when early frost occurs.

The most troublesome seedling disease is caused by the rhizoctonia fungus, the nematologist said. Sometimes called damping-off, soreshin, or "rhizoc," the fungus is soil borne and is present in all crop soils.

Because the fungus is a weak parasite, severe stand losses occur only under conditions where the seedlings have been weakened by certain other factors.

Among these other factors which predispose seedlings to the rhizoctonia fungus are cold soil temperature, damage from thrips and the cotton root-knot nematode. The latter feeds from within the root tissues of the cotton seedling. This weakens the seedlings, thus setting them up for attack by the fungus. In addition, the nematode continues to feed and develop on the surviving cotton, often until time of harvest.

Soil Fumigation Gives Good Results

Dr. Reynolds said that cultural methods can cut losses and that soil fumigation for the nematode-disease complex has given good results, especially of fields which are planted to cotton year after year.

Measures taken after harvest and before planting of another crop often pay big dividends in controlling insects and diseases in cotton, J. H. O'Dell, county agent, Phoenix, told the group.

Practices cited by Mr. O'Dell, as used in California, included stalk destruction in the field and cleaning of ditch banks, field borders and waste areas. He said the growing of stub or volunteer cotton contributes to insect problems because the stalks and undisturbed soil furnish a place for the insects to live through the winter.

In Texas, the speaker pointed out, early harvest and immediate stalk destruction are recommended to reduce pink bollworm and boll weevil populations.

New Mexico's post-harvest control of insects is largely directed at the pink bollworm. Stalks are left standing in the field until after several hard freezes and then plowed under as deeply as is practical.

In Arizona, clean-up of weeds on ditch banks, fence rows and in fields has long been advocated, Mr. O'Dell said.

Summing up the points made by speakers on his panel on "latest know-how in obtaining and maintaining a stand of cotton," Dr. Phillip J. Leyendecker, head, department of agricultural services, New Mexico A&M College, told the group that the success of next year's cotton crop actually begins right after harvest of the previous crop. He said that it is first necessary to reduce the overwintering stages of insects which attack young cotton, and showed slides illustrating cultural means of doing this.

"In areas where the pink boll worm is a problem, over-wintering worms are easily destroyed by rotary-shredding types of stalk cutters," he said. This action should be followed by deep plowing. The New Mexico expert continued with descriptions of practices to be followed in preparing for a good stand of cotton.

Dr. Leyendecker emphasized that the age of mechanization is not a thing of the future, but it is here right now. "We are no longer in the horse-and-buggy days when a fair cash return could be made from irregular, skippy, unhealthy stands," he said. "We are now playing for keeps and the stakes are high. We are facing reality in these matters."

Some 25,000 acres of cotton will be treated with chemicals for weed control in Arizona in 1957, according to H. Fred Arle, plant pathologist with the USDA, Phoenix. This acreage would represent about 7% of the total cotton acreage, he said. This proportion, though low is still higher than that in other western cotton-producing states, it was pointed out.

Mr. Arle said that in most instances, the benefits received from various applications have been far in excess of the treatment costs. The additional return from the increased yields due to the elimination of weed competition and higher prices for clean cotton fiber should be a strong inducement to cotton growers to attempt this method of weed control.

In the latter case, he said that irrigation should be continued until it is assured that the beds will become completely wetted or "blackened" by subbing of the water. "It is very difficult to achieve this under the practice of irrigating every other row," he said. "During 1956, inferior weed control was obtained by several commercial growers who used skip row irrigation following treatment."

Rainfall, of course, influences the results of chemical weed control applications. During 1955, Mr. Arle explained, rainfall occurred within a day or two after the spraying of several commercial fields. In each case, severe, temporary chlorosis became evident within a few days. During 1956, however, very little precipitation was received during the summer months. And in spite of the great increase in treated acreage, chlorotic fields were fewer than in the year before. By the same token, he said, control of weeds in some fields which were treated during both seasons was slightly less efficient in 1956.

Rising costs of production and increased competition from man-made fibers make it imperative for the cotton farmer to gain maximum yields with lowest possible loss from plant diseases; yet, the desire for greatly increased yields in cotton actually creates conditions favorable to plant diseases, Dr. John T. Presley, USDA plant pathologist, Beltsville, Md., told the conference.

He urged growers to aim for the maximum yield that can be obtained without appreciably increasing the disease hazard.

Under western conditions, he said this can be done by combatting seedling diseases by planting good, properly-treated seed; fumigating with recommended nematocides to control root-knot nematode; planting blight resistant varieties to avoid boll rots; and by planting tolerant varieties of cotton to minimize the incidence of verticillium wilt.

Water Needs of Cotton Reviewed

Dr. Morris E. Bloodworth, soil physicist at Texas A&M College, in a talk on the "relationship of soil structure, moisture and aeration to plant stands and growth," said that lesser amounts of irrigation water are needed for young cotton plants, and if too much is put on, a great deal is lost through evaporation from the soil surface. As the plants begin to bloom and set fruit, the daily need for water increases.

Claude L. Welch, director of production and marketing for the National Cotton Council, Memphis, pictured research as being a "competitive weapon that can mean salvation or suicide for the cotton industry."

He said that research on the part of makers of competitive fibers has been "narrowing the margin of quality superiority that has been protecting cotton in many of its markets," and pointed out to the cotton growers that "we are in a crisis that may well provide the supreme, all-time measure of our industry's ability to fight back and meet its competition." He made a plea for "bigger and better programs of research" to further the cause of cotton.

Other speakers on the two-day program included experts in cotton production from the USDA and southwestern colleges.

An open house sponsored by agricultural chemical companies, cotton producer groups and other organizations took place on the evening of March 4 at the Westward Ho.

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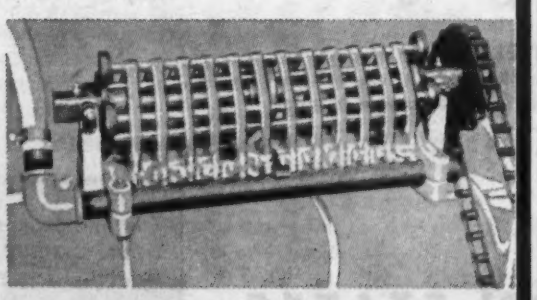

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Shaft Sinking Underway for New Potash Enterprise

CARLSBAD, N.M. — Shaft-sinking perations are now underway at the te of this area's seventh potash enerprise. E. F. Kinsvater, president nd general manager of Farm Chemial Resources Development Corp., reorts that the mine is scheduled to into production in the last months 1958 or early in 1959.

McKenzie and Whittle, contractors n this project, began work about an. 1 and, after setting up equipent, have started sinking the shaft. potash refining plant will be built ter. The mine site is 29.8 miles east Carlsbad, off the Hobbs highway.

Farm Chemical Resources Developent Corp. is half-owned by the armers Union; Phillips Chemical Co. nd Kerr-McGee Oil Industries Inc. hare ownership of the other half.

The other potash firms in this area re: U.S. Potash Co., Potash Co. of merica, International Minerals and hemical Corp., Duval Sulphur & otash Co., Southwest Potash Corp., nd National Potash Co. The latter rm, owned jointly by Pittsburgh onsolidation Coal Co. and Freeport ulphur Co., made its first shipments st month (see Croplife Feb. 25).

M. K. Thornton, "Mr. Soils" at Texas A&M, Retires

COLLEGE STATION, TEXAS—M. . (Duke) Thornton, longtime agriultural chemist for the Texas A&M ollege System, retired on March 1.

Mr. Thornton has spent most of his dult life with the college. In 1935 e resigned from a teaching position t the college to become a leather pecialist, which also included workg with small farm industries which volved the use of chemicals on the arm.

In 1938 Mr. Thornton began his ng tenure as a soil chemist. In this eld he became widely known roughout Texas and the nation. In s early days working with soils, he arried portable chemistry laboraories with him whenever he conducted training schools for county agents nd agricultural groups.

As the years passed, he became nown as "Mr. Soils" because of his nowledge with soils in all parts of he state. In 1951 he was placed in harge of the new soils laboratory at ollege Station. He was given the reponsibility of setting up standards nd writing the fertilizer recommenations and cropping systems to be llowed.

Because of his work, now hundreds farmers every year send soil samles to the laboratory. By following is recommendations, there has been n increase in fertilizer and accomanying higher yields.

Oregon Tree Fruit Crop Output Down in 1956

PORTLAND, ORE.—Oregon tree uit crops production in 1956 mounted to 288,580 tons, 6% below e 1955 tonnage of 305,550 tons and % above average, reports the Oreon crop reporting service.

Prices for nearly all tree fruits in 56 were above 1955 resulting in a gher total value of tree fruits. The tal 1956 value was $35,113,000, out 1% above 1955 value at $34,-5,000 and 9% above the 1951-55 erage.

Fall and winter pears led in value 1956 production with a total of 4,515,000 followed by bartlett ars, apples, and sweet cherries. ums and prunes ranked fifth in lue of production with a total of 951,000.

Charles A. Leonard

MONSANTO TRANSFER — Charles A. Leonard of St. Louis, farm chemicals sales representative for Monsanto Chemical Co., has been transferred to Camp Hill, Pa., to handle the sale of Monsanto-labelled farm chemicals in a 13-state eastern territory. Operating from his Camp Hill location, Mr. Leonard will be responsible for obtaining distribution of the weed killers and insecticides formulated by the company's Organic Chemicals Division. His sales area includes Maine, New Hampshire, Vermont, New York, Pennsylvania, Massachusetts, Connecticut, Rhode Island, Maryland, Delaware, New Jersey, Virginia and West Virginia. A native of Flora, Ill., Mr. Leonard joined Monsanto in August, 1955, after seven years of experience in market research and analysis, sales management and field sales development. He holds degrees in economics and marketing from the University of Cincinnati.

WITCHWEED

(Continued from page 1)

ord. States from which communications were received included Alabama, Arizona, California, Colorado, Iowa, Kansas, Louisiana, Michigan, Mississippi, and South Dakota.

Advocacy of a federal quarantine by the Carolina farmer representatives was based on the understanding that (1) the general farming practices followed in the affected counties would be taken into consideration, so that the agricultural economy of these areas would be disturbed as little as possible by the quarantine; (2) quarantined areas would be designated cooperatively by the federal and state agencies concerned; (3) continuing research on control and eradication measures for use against witchweed would be supported; and (4) efforts to eradicate the pest would be promptly undertaken.

Hearing discussions clarified several points concerning procedures for imposing a federal quarantine against a crop pest such as witchweed.

Lev. F. Curl, assistant director of the U.S. Department of Agriculture Plant Pest Control Division, pointed out that the law provides for placing entire states under quarantine, but when the states themselves promulgate their own quarantines against a particular pest, it is then possible to confine federal-state enforcement of quarantine regulations to specific areas cooperatively designated as requiring regulation. The boundaries of such areas would be decided upon jointly by USDA and state agricultural officials after on-the-ground study of infested localities. Mr. Curl emphasized also that quarantines are designed to prevent spread of the pest but are not in themselves a means of eradication.

DROUTH MESSAGE

(Continued from page 1)

effect he favors new legislation for federal payments for grazing land. Pending bills would provide a rental to farmers who put drouth area grazing land out of bounds for grazing purposes.

USDA says in its phase of the White House message that it wants additional authorization of money for disaster loans—amounting to 25 million dollars; another 25 million for disaster loans for emergency feed assistance to farmers and ranchers; and another 26 million dollars to re-finance farm indebtedness under the Bankhead-Jones Tenant Act.

All this had been submitted prior to the President's tour into the drouth area.

The USDA report says that the private and cooperative credit systems are generally adequate to handle local problems.

That is not what is heard here from responsible trade sources. On the contrary, they say that the ranchers and livestockmen in the drouth area are flat broke, without folding money.

The White House message says, as does the USDA statement from Sec. Benson that "additional funds are recommended for grasshopper control in areas where drouth has increased the hazard of this pest."

Walter A. Schemmer Heads Iowa Lime Group

DES MOINES—Walter A. Schemmer, Logan, Iowa, has been elected president of the Iowa Agricultural Limestone Assn. Other officers are Robert E. Frampton, Des Moines, vice president, and Glenn Moore, Gilmore City, Tom L. Robinson, Des Moines, Forrest A. Thomas, Centerville, and Dennis Schildberg, Greenfield, all directors.

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Talks on Safe Handling of Pesticides Featured at Texas Aviation Conference

COLLEGE STATION, TEXAS—Hazards in handling and using agricultural chemicals was a major consideration during the recent Texas Agricultural Aviation Conference and Short Course on Pest Control at Texas A&M College.

An entire morning session on use of insecticides and herbicides in the general meeting, and an afternoon in special session were devoted to use of chemicals.

Dr. J. C. Gaines, head of the department of entomology at Texas A&M, was in charge of a symposium on insect control, and Dr. R. A. Darrow of the department of range and forestry headed a similar group for herbicides.

Special stress was placed on what the applicator can do to protect himself while using the phosphorus compounds. Blood tests for cholinesterase, protective equipment and sanitation were the main points.

"There is no cause for panic, but there is due cause for caution," Dr. Gaines told more than 300 applicators and representatives of closely related fields. The entomologist also told applicators what is being done in the way of general education throughout the state to prevent serious problems from developing.

He outlined a recent meeting at College Station, in which a program for informing doctors generally of what to do when a patient shows symptoms of such poisoning. This consists chiefly of action by the Texas A&M College System, the Texas State Medical Assn. and the Texas State Health Department to assure receipt by all doctors of proper material for handling such cases.

All county agents in the state will have on hand the booklet by the U.S. Department of Health, Education and Welfare of the Public Health Service, "Clinical Memoranda on Economic Poisons," as well as any other information available. All doctors are encouraged to obtain such booklets, and in addition, the medical association has agreed to prepare a digest from the booklet aimed specifically at the phosphorus compounds.

"This phosphorus material is like a high-powered rifle," Dr. Gaines said. "If it is used properly, it can be one of the best tools the farmer or the applicator can have. If improperly used, it is equally dangerous."

Dr. Darrow and his group discussed use of aerial application in control of brush, with considerable emphasis being placed on the new granular herbicides. Use of these materials, applicators were told, means a shift in timing of application. Instead of trying to hit brush pests during the period of lush growth, as with foliage applications, the applicator must remember that the granular materials must enter the plant through the root system. This means the material should be applied just prior to the rainy season.

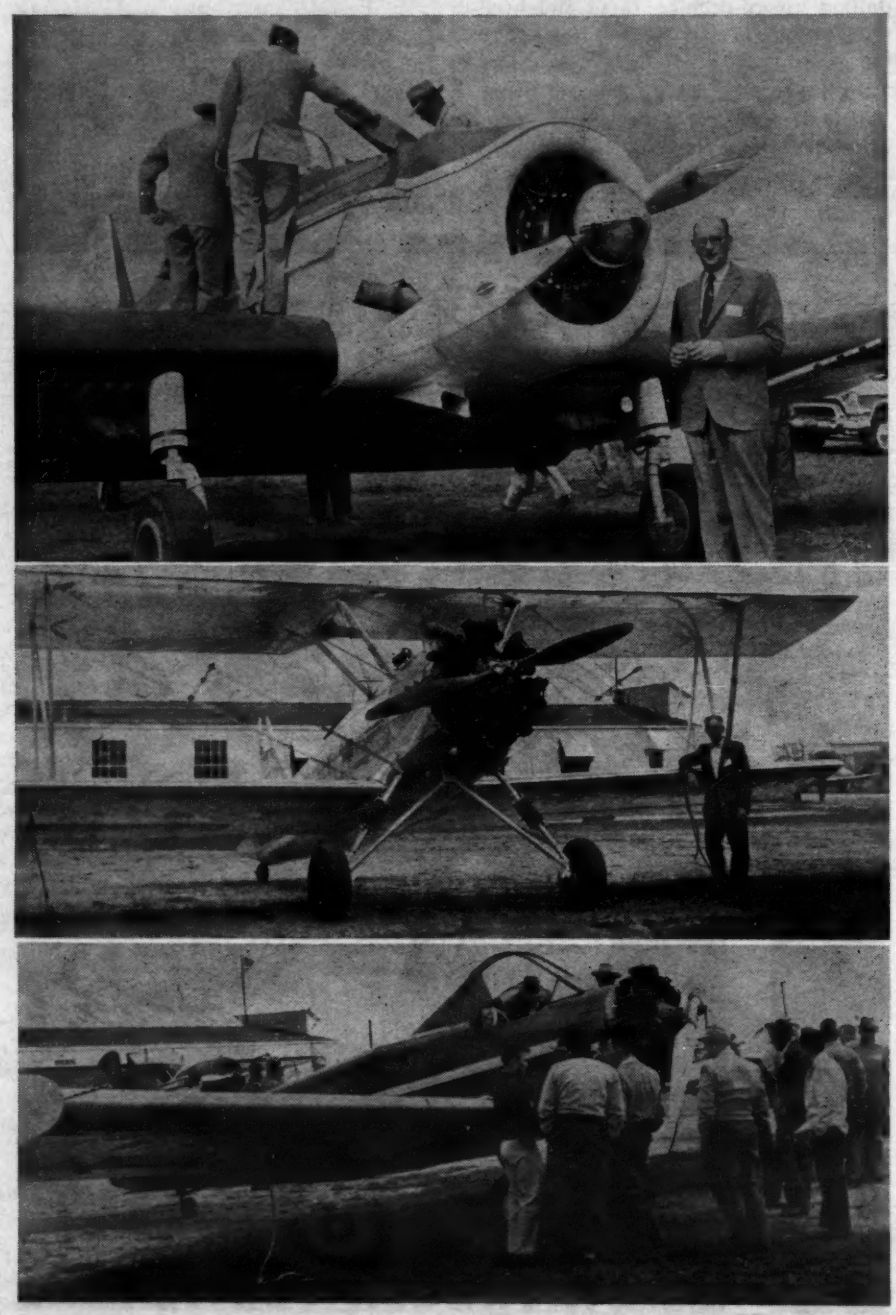
Prof. F. E. Weick, head of the Texas A&M College System's Aircraft Research Center, said in summation, "We had the best batch of new agricultural aircraft designs ever assembled anywhere.

"We had a good session on equipment; particularly on equipment for the distribution of solids such as granular materials, fertilizers and seed. People interested in design of distribution equipment now have more information available than ever before.

"We also had some good study results of the effect of cross-winds on spray distribution. Our work here now has reached the point where we are interested in working toward development of equipment to make spray droplets more uniform in size. This will result in better patter distribution, which in turn will mean more economical operation for the applicator and better results for the farmer."

Agricultural airplanes exhibited during the meeting included the Ag-2, adapted and manufactured by the Transland Company of California from Mr. Weick's Ag-1; the Ag-3, another development by Mr. Weick and his associates; the Snowplane S-2, designed and built by Leland Snow of Harlingen, Texas; the Call-Air; the Sanders Hi-Lift Wing Ag 7530, mounted on a Stearman, and the Clark Aircraft Co.'s all-metal Stearman.

Dates were announced for next year's conference as Feb. 23-25.



AT TEXAS CONFERENCE—The aircraft above were among those exhibited at the recent Texas Agricultural Aviation Conference and Short Course on Pest Control at Texas A&M. At the top, F. E. Weick, head of the Texas A&M Aircraft Research Center, stands at the nose of an Ag-2, adapted and manufactured by the Transland Company of California from Mr. Weick's Ag-1. Center is John C. Clark, Clark Aircraft, Inc., Marshall, Texas, and his firm's all-metal Stearman. In the lower photo, a group gathers in front of the Snowplane S-2, designed and built by Leland Snow, Harlingen, Texas.

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Best Soil Treatment Would Add $51 Million To Illinois Oat Crop

URBANA, ILL.—Illinois farmers would have $51 million more income from their oat crop if they used the best soil treatments they know how to use.

A. L. Lang, University of Illinois agronomist, bases this estimate on the 1956 yield figures from 437 oat plots on the 23 soil experiment fields in the state.

Mr. Lang points out that oat yields on all untreated soil plots averaged 38 bu. an acre. On the plots where the best soil treatments were applied, yields averaged 75 bu. an acre. Average oat yield for all Illinois farms last year was 47 bu. an acre.

Farmers averaged 9 bu. more oats an acre by using some soil treatments than they might have if they had used no treatment at all. But if they had followed the best recommended balanced fertility program, Mr. Lang says they would have been able to average another 28 bu. an acre.

If this extra oat yield had been obtained on all 3 million acres harvested in Illinois in 1956, it would have added more than 85 million bushels to the crop. At 60¢ a bushel farmers would have had more than $51 million more income from oats.

Velsicol Expands Midwest Soil Insect Control Sales Campaign

CHICAGO — A greatly expanded promotional campaign in the Midwest pushing the use of Heptachlor for soil insect control was announced recently by L. E. Carls, advertising manager of the Velsicol Chemical Corp. Increased farm paper advertising, more dealer promotional material, new literature, national farm paper advertising and direct mail will be used this year to promote the use of Heptachlor and Heptachlor-Fertilizer Mixtures for control of corn rootworms, wireworms and other soil insects that damage corn, sorghum, small grain and legume crops. Over 12,000,000 advertising messages and 50,000 direct mail messages will be used to tell the Heptachlor story.

Program materials are now available to the trade. National and regional farm paper advertising began early in March, and will run through the end of April. Additional information may be obtained by writing the Velsicol Chemical Corp., 330 East Grand Ave., Chicago 1, Ill.

Insect Research Noted At Minnesota Meeting

CROOKSTON, MINN. — Several recent developments in the control of harmful insects on Minnesota farms were reported recently at the annual Red River Valley Winter shows.

Among these was a suggestion for control of the Colorado potato beetle. A. G. Peterson, University of Minnesota entomologist, said that the insect has developed some resistance to DDT and that this resistance might be overcome by using toxaphene, dieldrin or heptachlor in alternate years.

The problem with another insect, the sugar beet root maggot, is not as severe in Minnesota as in other areas of the Valley. A recent survey has indicated that the maggot was found in the northern half of the Valley, but only one case of damage was spotted last year. The maggot has been a problem only on a few small light soil areas and during seasons of light rainfall in June and July.

Walter Miller

Walter Miller Named Field Specialist by Dow Chemical

MIDLAND, MICH.—Walter Miller has been appointed field specialist in agricultural chemical development for the Dow Chemical Co. in the five-state area which includes Alabama, Louisiana, Mississippi, Arkansas and Tennessee.

He will make his headquarters in Greenville, Miss., and will be engaged in research and development work on insecticides, soil fumigants and commodity and space fumigants.

Mr. Miller will provide technical assistance in research and development studies conducted in connection with various Dow products by state colleges, agricultural experiment stations and U.S. Department of Agriculture, extension service and industrial research groups.

In these activities he will be associated with Hoyt Nation, veteran Dow field specialist who has long been identified with agricultural chemical research and development work in the South.

Mr. Miller is a native of Greenville, Miss., and received his B.S. degree in biology and chemistry from Delta State Teachers College, Cleveland, Miss., and his M.S. in entomology and zoology from Mississippi State College. His experience includes work with the U.S. Public Health Service and the Mississippi State Board of Health.

California Chemical Employment Shows Gain

SAN FRANCISCO — Employment in chemical manufacturing industries in California, including wage and salary workers, was up by an average of 3½% during 1956 as compared to the previous year.

The division of labor statistics and research of the State Department of Industrial Relations found an average of 38,300 persons employed in the making of chemicals each month of last year as compared with 37,000 during 1955. This average was higher by 300 persons than the peak month of the previous year, November, which apparently marks the month of heaviest production. A new all time high for a single month was attained in November, 1956, when 39,600 were at work in the industry.

The growth has been rapid during the past six years, and represents an increase of 30% since 1950, when the annual average was 29,600 wage and salary workers.

ALABAMA BULLETIN

AUBURN, ALA.—O. N. Andrews, Alabama Polytechnic Institute extension agronomist, is author of a recent bulletin, "Chemical Weed Control on Alabama Farms."

NATA Launches Agricultural Aviation Activity Survey

WASHINGTON — The Aerial Applicator Division of National Aviation Trades Assn., with headquarters at Washington, D.C., has launched a nationwide survey, covering agricultural aviation activities, it was announced by the association's agricultural chairman, John Neace of Phoenix, Ariz.

The questionnaire covers material and areas of information that have not heretofore been available, and will supplement information of the Civil Aeronautics Administration.

It is expected that the results will be of assistance to NATA in furthering the aerial applicator industry, as well as of assistance to chemical manufacturers, growers and state and federal agencies, Mr. Neace said.

In addition to general data on revenues, investments, type aircraft used and work performed, the survey covers information on charges, personnel employed and insurance coverages, together with information on the use of toxic chemicals and means of improving safety.

Of particular interest to NATA will be air applicators' opinions on establishment of further standards for the industry that have been proposed in recent months by the Civil Aeronautics Administration. Questions are also being asked for information on those developments which the industry feels will be of assistance in expanding and improving aerial application and providing greater service to the growers of America.

The survey is geared to IBM analysis, Mr. Neace stated, and it is expected that the project will be made an annual affair.

WEED CONTROL SCHOOL

VERNAL, UTAH—A weed control school will be held at the courthouse here March 27.

Monsanto Inorganic Division to Take Over Operation of Two Plants

EL DORADO, ARK.—T. M. Martin, president of Lion Oil Co., a division of Monsanto Chemical Co., announced Feb. 25 that the responsibility for operation of the El Dorado chemical plant and the Barton plant will be transferred to the Inorganic Chemicals Division of Monsanto about April 1.

That division has for some months been marketing the products manufactured at the two chemical plants. He pointed out that the transfer does not indicate any change in manufacturing operations.

TURF SPECIALIST

NEW BRUNSWICK, N.J. — C. Richard Skogley is the new assistant extension specialist in turf management at the College of Agriculture, Rutgers University.

POTASH RAISES FARM INCOME. The successful American corn farmer. He talks rotations and experimental stations. He talks potash, too. It's not all talk, either, because every September he comes up with the best harvest around. So it must be true, what he says about using potash-enriched fertilizers in his soil—that they fight diseases and help increase his yield. He works no harder than the next farmer. The prices he gets are a little fancier, that's all.

USP's Higrade muriate of potash is free-flowing and non-caking and has the highest K_2O content—62/63% K_2O. Also available, USP's Granular muriate of potash contains a minimum of 60% K_2O.

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Rhode Island University Presents a Study on Urea-Form Fertilizer Compositions

On February 2nd, 1957 before a group of New England agronomists, Rhode Island University presented data which resolved one of the most controversial subjects since urea-forms were commercially introduced to the market a few years ago. Nitroform has always suggested the use of their urea-form in fertilizer formulas if the user were to obtain the highest benefit from his U-F applications. The benefits of single season applications would be greatly reduced if the potential user were forced to make applications of phosphate and potash following the nitrogen. Again it has been shown that various sources of nitrogen greatly improved the working qualities and nitrification characteristics of urea-form. Work conducted at Rhode Island University under the direction of Dr. Jesse DeFrance proves conclusively that urea-forms are both practical and desirable in fertilizer formulas.

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WORLD REPORT

By GEORGE E. SWARBRECK
Croplife Canadian and Overseas Editor

Final plans have been made for the erection of a DDT plant at Alwaye, South India. Capacity will be 1,400 tons a year, with completion expected by the summer of 1958.

Management is to be placed in the hands of Hindusthan Insecticides (Private), Ltd., which runs the present DDT factory at Delhi. The firm is sponsored by the Ministry of Production. The Delhi factory started up in the spring of 1955 with a capacity of 1,400 tons, but it is now planned to step up production to 2,800 tons.

Imperial Chemical Industries is producing about 2,000 tons of BHC at Rishra, near Calcutta. Therefore, when Alwaye comes into operation, India will be capable of producing well above the 5,000 tons a year estimated as being required to meet the needs of the anti-malarial program.

Canadian Urea

North American Cyanamid, Ltd., is to start construction shortly of its planned $15 million chemical plant at Hamilton, Ont. The site has been bought from Dominion Foundries & Steel Corp. and byproducts from Dofasco will supply the raw materials.

Urea will be one of the products available for the fertilizer industry. Completion is expected by 1958 and the plant will have an initial capacity of 52,500 tons of anhydrous ammonia and 66,000 tons of urea.

Israeli Phosphate

Israel is rapidly extending its stake in the rock phosphate market and during 1957 it is expected that about 100,000 tons will move into export channels.

Output in 1956 totaled 117,000 tons and about one third of this was exported. Expected production this year is 180,000 tons. Domestic requirements are in the region of 75,000 tons a year. About 50,000 tons have already been committed under contracts with foreign buyers and the balance is in process of negotiation.

By 1958 the Israelis hope to hit an output of 250,000 tons. Additional equipment has been ordered from West Germany.

The government-owned Phosphate Mining Co. is not yet showing a profit despite the boost in production. However, officials say that an output of 250,000 tons a year will enable the concern to break even, while anything over this figure will represent profit.

Turkish Plant

Good progress is being made in the construction of the new fertilizer plant at Kutahya, Turkey. Completion is scheduled for next year.

The owner is Nitrogen Industries, Ltd., and the German firm of Badische Anilin und Soda Fabrik is the contractor. Cost is assessed at the equivalent of $43 million and the annual productive capacities will be 60,000 metric tons of ammonium sulfate, 50,000 tons of nitrate, 6,000 tons of concentrated nitric acid, 1,000 tons of crystallized ammonium nitrate, and 1,000 tons of liquid ammonia. The sulfuric acid to be processed will come from the byproducts plant at the Murgul copper smelter in eastern Turkey.

Aussie Research

The New South Wales Department of Agriculture is sending a plant breeder, H. W. Lea, to spend six months in the U.S. to study the latest methods of improving tobacco plants. He is particularly interested in the most recent methods of crossing commercial varieties of tobacco and other plant species which are highly resistant to tobacco diseases. Blue mold is the most serious of these diseases, and it is estimated to cost Australian tobacco producers $2,250,000 a year.

Mr. Lea will also investigate the use of radioactivity for changing the inherited qualities of tobacco plants.

Sulfur in Costa Rica

A business man in Costa Rica is seeking capital assistance in the U.S. for the development of sulfur deposits in the province of El Congo. He is Ricardo Massey S. Mr. Massey says he holds a concession. The deposits are said to cover 137 mining claims of just under 10 acres each. Assays show a sulfur content of between 30% and 99.98%.

Interested firms are invited to correspond with Mr. Massey at P.O. Box 2086, San Jose, Costa Rica.

Burmese Project

A report from Rangoon says that the Burmese Industrial Mission has reached an understanding with a group of Japanese fertilizer firms for the establishment of a joint chemical fertilizer factory in Rangoon. The initial target is a production of 50,000 tons a year, mostly phosphate and nitrogenous fertilizers. Eventually, output will be raised to 100,000 tons.

Meanwhile, the U.S. Department of Commerce announces that the deadline for the receipts of bids by foreign firms for the construction of a superphosphate, sulfuric acid and fertilizer mixing plant has been extended to April 1.

Requesting the bids is the Industrial Development Corp. (Croplife, Jan. 28, page 8.)

Japanese Exports

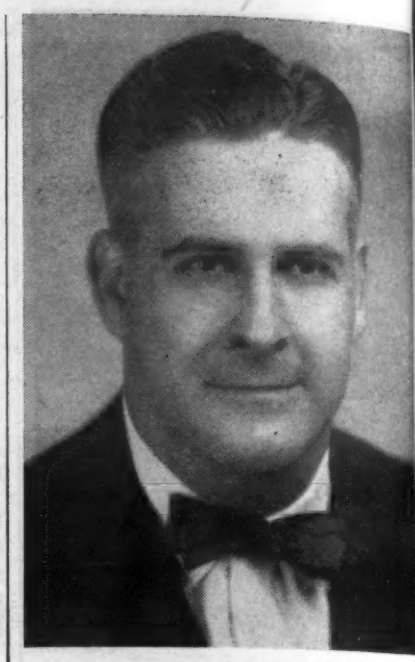
A Japanese fertilizer selling mission has reported some sales successes from Peking, China. Contracts have been concluded for the export to China of 50,000 tons of urea and 170,000 tons of calcium superphosphate. The Chinese also want sample shipments of ammonium chloride and phosphorus fertilizers and will take 3,500 and 1,000 tons of each.

Super Production Decreases in 1956; Shipments Show Gain

WASHINGTON — U.S. production of superphosphate in 1956 totaled 2,264,461 short tons (100% A.P.A.), compared with 2,310,499 short tons in 1955, the Bureau of the Census has reported. Shipments in 1956 were 1,548,849 short tons, a gain over 1,490,725 short tons in 1955.

Output in 1956 included 1,493,013 short tons of normal, down 4% from 1,557,073 in 1955; 12,888 short tons of enriched, down 67% from 39,042; 751,831 short tons of concentrated, up 6% from 706,584, and 6,729 short tons of wet-base goods, down 14% from 7,800.

Shipments in 1956, with those for 1955 in parentheses, were: normal 819,054 (837,506), enriched 5,118 (14,130), concentrated 718,622 (632,327) and wet-base goods 6,055 (6,762).



William S. Formwalt

William S. Formwalt Named to Post with Pennsalt of Washington

TACOMA, WASH. — Appointment of William S. Formwalt as assistant to the vice president was recently announced by Fred C. Shanaman, president, Pennsylvania Salt Manufacturing Company of Washington, Western Division, Pennsylvania Salt Manufacturing Co.

Upon graduation from Hampden Sidney College, Mr. Formwalt taught science for a few years prior to entering the service in World War II. After overseas experience as a major in artillery, Mr. Formwalt became associated with Davison Chemical Co., Division of W. R. Grace & Co., Baltimore.

During the Korean War, Mr. Formwalt was loaned to the government by Davison and served in the Chemical Division of the National Production Authority as head of the Sulfuric Acid Section. Following service in Washington, Mr. Formwalt returned to Baltimore where he resumed his work in sales particularly related to sulfuric acid and phosphate rock.

Mr. Formwalt has established a home in Tacoma for his wife and three children, and will make his headquarters at the home office of the Western Division which is located at 2901 Taylor Way, Tacoma.

San Francisco Area Plants Expand in 1956

SAN FRANCISCO — Nine chemical plants invested a little over three quarters of a million dollars in capital investments in San Francisco during 1956, according to a report by the industrial department of the San Francisco Chamber of Commerce.

Eight already existing plants spent an estimated total of $744,500 to improve their factories, and one firm built a new but small plant with an investment of $6,000, bringing the over-all total to $750,500 during the year.

In the San Francisco Bay Area as a whole, there were 69 factories which invested a combined total of $20,743,248 during the year. Of this amount, 17 new plants were constructed at an estimated capital outlay of $7,696,000, and 52 existing factories were improved upon at a cost of $13,047,248.

Elsewhere in Northern California seven additional chemical manufacturing firms made improvements. Four of these were expansions in existing firms, and three were new plants. The total investments for all 76 companies in Northern California was $21,654,678, the chamber estimated.

Firms dealing both in agricultural and industrial chemicals are included in these figures.

SHOP TALK

OVER THE COUNTER

FOR THE DEALER

By EMMET J. HOFFMAN
Croplife Merchandising Editor

Most all dealers have known the "doubting Thomas" type of farmer-customer who has the feeling that advances made in farm chemicals are for the benefit of the businessman—to line his pockets, as the saying goes—and not with the farmer foremost in mind. Now there is actual evidence that such feelings exist. The evidence is supplied by a research specialist who has done considerable work on the emotional attitudes of farmers. The researcher is Albert Shepard of the Institute of Motivational Research, Inc., Croton-on-Hudson, N.Y., who says that as a group farmers do not think that progress in lines of agricultural products are for the farmers' benefit primarily but for the manufacturers' and dealers' good.

Mr. Shepard rates farmers, with physicians, as the two main groups of "rugged individualists" in American society. He said farmers' emotional reactions today center around these four major attitudes:

- There is the intense feeling among farmers that they are a neglected element in the American economy, an attitude which Mr. Shepard describes as "feeling like stepchildren."
- There is a deep feeling among farmers that they are the innocent victims of powerful economic forces which, in Mr. Shepard's words, are "pushing them around." This leads farmers to wish to reassert their individual independence and "to be their own boss," he says.
- There is an increasing participation of the wife as a partner in the business of farming.
- There is an increasing search by farmers for the scientific facts behind advertising and sales presentations of manufacturers.

Mr. Shepard said that these attitudes apply primarily to the family type farm and not the corporation farm where such personal emotions are probably not a factor. The emphasis in selling should be on help and service, he said, in citing instances in which a friendly corporate "personality" had been built up.

Collections By Outside Salesman

Nearly all dealers who have had outside selling programs in force for a number of years claim that the system gives them important assistance in helping them make collections. In other words, the outside selling program becomes a sort of additional safety factor in extending credit.

The outside salesman may be used as a collection man. However, in many cases he is not a collection man but he is useful in finding out what kind of a manager the credit applicant is, what commodities his farm is raising and when they are going to market.

Many dealers have used the opportunity provided in the frequent customer contacts to get a high turnover of accounts receivable investment.

Oppose Direct Selling

A resolution concerning direct selling by manufacturers was passed at a meeting of the Ohio Grain & Feed Dealers convention at Columbus. It read:

"Whereas direct selling practices by certain manufacturers have been increasing and whereas we firmly believe that ultimately such practices will result in higher prices paid by the farmer, be it resolved that this association urge its members to support and patronize those manufacturers who confine distribution of their products through established dealers."

Sprinkler Irrigation Has Big Gain in Idaho

MOSCOW, IDAHO — Sprinkler irrigation has increased two and one-half times in Idaho during the past five years, Dorrell C. Larsen, Idaho extension irrigationist, reported at the University of Idaho farm electrification short course.

Crop and pasture land under sprinkler irrigation in 1956 has been estimated at approximately 129,000 acres. Just five years ago, in 1951, the total stood at 56,700. Of this sprinkler acreage about half, 70,239 acres, is in southeastern Idaho. Other sections of the state show up as follows: northern Idaho, 19,062; central Idaho, 13,197 acres; and southwestern Idaho, 26,400 acres.

Mr. Larsen's statistics also show that Idaho ranks third in the top states on the basis of irrigated acreage. The state's total land area under irrigation amounts to 2,324,120 acres, accounting for 70 to 80% of the state's total crop production.

Cotton Diseases Cost Arizona $20 Million

TUCSON, ARIZ.—Cotton diseases cost Arizona farmers 123,276 bales of cotton in 1956, according to Ivan J. Shields, extension plant pathologist for the University of Arizona. At the 1956 price of about $160 a bale, this adds up to a loss of nearly $20 million.

FARM INCOME UP

SAN FRANCISCO — Agricultural income in California rose to a new high level during 1956, on the basis of preliminary reports, according to the California State Chamber of Commerce. Total receipts are estimated for the year as 4% greater than the previous year. Net farm income will also show a significant rise, the chamber reports, as farm costs increased relatively less than gross receipts. The major portion of the income gain resulted from larger receipts from the sale of crops which rose some 6% over the previous year. Included were grapes, citrus fruits, tomatoes, pears, and cotton. Lower returns came to growers of lettuce, walnuts and hay.

Idaho Merchant Builds City And Farm Trade With Sound Planning, Alert Merchandising

By JESS F. BLAIR
Croplife Special Writer

Herbert Hatten, owner of the Pocatello Nursery, Pocatello, Idaho, never took a salesmanship course in his life. All he ever learned about selling came from observing people and watching other merchants. Yet he gained some sound psychology because it helped him in building up a thriving nursery, garden and agricultural chemical business in just three years time.

Some of the axioms he follows are these: (1.) If you can show people an easier way to do things, you've got it made. (2.) In telling customers about a new item, you can do a better job if you demonstrate it. (3.) Try every way possible to get people into the store, then do your stuff. But don't be too insistent. (4.) Remember that first 25¢ sale is the hardest, so be just as courteous to the purchaser as you would to your biggest customer. (5.) Keep the products clean and shining and arranged attractively.

Mr. Hatten practices these rules because he believes in them wholeheartedly. They have been of tremendous help because he had never had any business experience.

He started out with a small nursery, but soon saw that in selling trees and shrubbery, there were numerous other items each customer needed. Soon he was selling seed of all kinds, peat moss, fertilizer, garden and orchard tools and various kinds of insecticides.

His Pocatello Nursery started out strictly as town business. He felt that the 25,000 people in Pocatello could easily keep the business going, providing he got his share.

However, since he is located on a busy highway between the farming area and the center of town, he had farmers stopping in to make small purchases. As he became acquainted with them, he started stocking fertilizers and insecticides, a few poultry remedies and weed killers. Most of these sales were small, but have been getting larger all the time.

In the meantime, he now has many farm customers who buy their nursery stock, lawn grass, flowers and garden and orchard supplies from him.

He found the most money in insecticides was to spray it on the trees, so he bought a high-powered sprayer mounted on a truck and now contracts jobs. The sprayer was kept so busy last summer putting out insecticides and grass killers that it hardly every stopped.

"It probably goes back to that rule I mentioned," Mr. Hatten said, "of showing people an easier way to do things. And if you can do it for them, that is still better—and more profitable."

Mr. Hatten is a big believer in advertising and uses the radio and local newspapers regularly. This year he is planning a series of TV programs in sponsorship with two or three other firms. He finds the classified ads especially effective during the rush seasons when plants are being set out.

He says that planning ahead is especially important in this business. Because the winters are severe here in southeastern Idaho, the business comes in spurts.

His biggest rush is from April 20 till about May 20, though business continues good until in June. Then his sales come from insecticides, weed killers and spraying fruit trees. His farm sales remain steady until crops begin to mature, because the insects don't stop working until then.

He gets some business in trees and shrubs in the fall, then along in early December the business almost shuts down entirely. Some stores of this type don't expect any more business until spring, but Mr. Hatten has tried to fill in the dead spots with sideline sales.

One that started as a small sideline has almost become a main line. This is the sale of Christmas trees. From a humble start of a few dozen trees, he sold over 3,500 last Christmas.

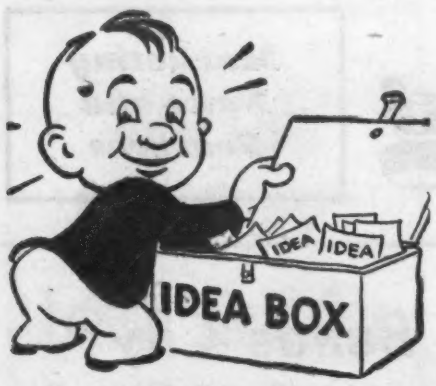
Mr. Hatten has small overhead costs as compared to some stores. His wife works in the afternoons as bookkeeper and saleslady. During the various seasons he hires help as he needs it, though he keeps one boy most of the time except during the severest part of the winter.

"One important thing is to know when the peak periods are coming," he said, "and have everything in readiness for them. Then hit them hard, putting in long hours every day to make every sale possible. There's always enough dull times when we can take inventory, clean up and remodel the place, build prettier displays and figure out what mistakes were made and can be avoided the coming season."

Another winter job is to get acquainted with home owners and find out who plans to plant a new lawn or hedge, who is interested in a power mower, and what the demand for products will be next spring.

He also finds winter talks with farmers pay off. A friendly conversation with a farmer on the streets of Pocatello during the winter may result in fertilizer or insecticide sales, or may be an orchard spraying job next spring.

IDAHO MERCHANT—Herbert Hatten, owner of the Pocatello Nursery, Pocatello, Idaho, has built a thriving business among both city and rural customers. His secret? He sticks to a set of good business axioms.



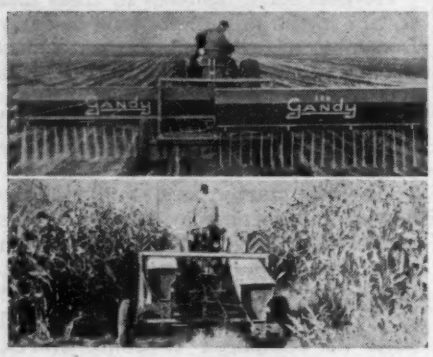
What's New...

In Products, Services, Literature

You will find it simple to obtain additional information about the new products, new services and new literature described in this department. Here's all you have to do: (1) Clip out the entire coupon and return address card in the lower outside corner of this page. (2) Circle the number of the item on which you desire more information. Fill in your name, your company's name and your address. (3) Fold the clip-out over double, with the return address portion on the outside. (4) Fasten the two edges together with a staple, cellophane tape or glue, whichever is handiest. (5) Drop in any mail box. That's all you do. We'll pay the postage. You can, of course, use your own envelope or paste the coupon on the back of a government postcard if you prefer.

No. 6543—Fertilizer Spreader

A 20-ft. wide, spreader-seeder that folds to less than 8 ft. in width for highway travel has been announced by the E. S. Gandrud Co. The unit is also claimed to minimize the soil compaction problem in wet fields. The unit holds more than one ton



of fertilizer at one time using either bulk or bag fertilizer. Two hoppers make it possible to use the spreader for application of mixed fertilizer or the application of two straight elements, one from each hopper. The unit is said to be ideal on cultivated land, pastures and hayland, as well as for side dressing six rows of corn at one time or banding fertilizer as in cotton. The seeding of brome grass, oats and other cereal grains or grasses is also possible. The unit is said to be suitable for custom work by dealers. Check No. 6543 on the coupon and mail it to Croplife to secure complete details.

No. 6546—Formulator's Folder

Formulators of all types of insecticides may secure without charge a publication entitled, "Pyrenone Facts Folder," prepared by the Fairfield Chemical Division of the Food Machinery & Chemical Corp. The contents include sections devoted to time-saving helps, resistant insects, household products, dairy sprays, garden and truck crop insecticides, livestock sprays and powders, food handling and processing, aerosols and pressurized sprays, condensed product data and specifications for the company's products. Formulators may secure the folder by checking No. 6546 on the coupon and mailing it to Croplife.

No. 5652—Tail Gate

An electric tail gate for trucks, called by the trade name, "Jiffy-Lift," can lift up to 600 lb. in 15 seconds, it is claimed by the manufacturer, Mid West Body & Manufacturing. The tail gate's motor is reversible; it has a built-in motor brake and the heavy duty push button

control has a built-in lock for security. The all-steel ramp unit weighs 225 lb. and is designed for ½- and 1-ton trucks. All moving parts run on ball bearings. The unit is designed to permit the truck to operate within its present license fee. The tail gate is delivered completely assembled and ready for installation. Secure complete details by checking No. 5652 on the coupon and mailing it to this publication.

No. 6547—Piperazine Booklet

A recently published booklet on piperazine is announced by the Dow Chemical Co. The booklet describes the properties, reactions and uses of the compound. Toxicological and handling information is included. Piperazine derivatives have been tested as fumigants, insecticides, fungicides and antimicrobials. Secure the booklet by checking No. 6547 on the coupon and mailing it to Croplife.

No. 5648—Side-Dump Body

A side-dump transport, manufactured by the Baughman Manufacturing Co., unloads from individual buckets into truck-mounted bodies, and can be used for other big, heavy-duty bulk transport assignments. The buckets can be raised or lowered by means of hydraulic rams, which are

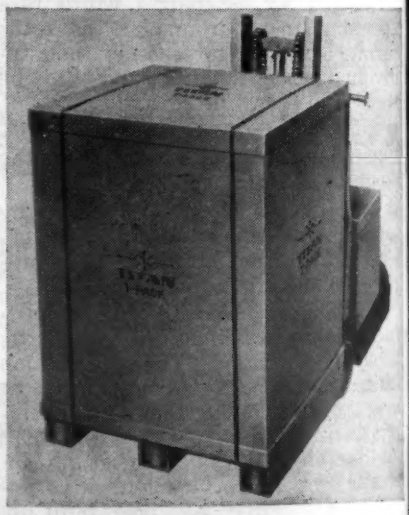
mounted on a monorail and moved into unloading position by means of a winch arrangement. The buckets are available with or without lids. The lids fold out during discharge to form a discharge chute. The company also manufactures a self-supporting hopper-type bottom dump utilizing gravity discharge and a hopper-type auger unloader body. Sliding gates in the body bottom control the discharge flow material in the gravity discharge system. In the hopper-type auger unloader body, a divided auger in the bottom carries the material to the center-of-body vertical discharge auger. Secure more complete details by checking No. 5648 on the coupon and mailing it to this publication.

No. 6538—Safety Folder

United-Heckathorn is now offering, free of charge, a revised edition of a wallet-sized safety folder including a revised list of antidotes for all the agricultural chemicals. The list contains antidotes for the newer agricultural insecticides such as Phosdrin, Thimet and Guthion. A new section concerning disposal of empty containers is included, together with a list of the latest approved safety equipment for handling of agricultural chemicals. Secure the folder by checking No. 6538 on the coupon and mailing it to Croplife.

No. 5644—Bulk Materials Container

A new self-palletized and expendable bulk materials container called the T-Pack has been introduced by the Titan Pallet Co. Internally supported, the T-Pack includes a lid which can be strapped or taped for security (see photograph). It is designed to accommodate up to a ton, depending on material density, and is proportioned to stow snugly in standard boxcars and trailer trucks. Standard specifications are 35 in. by 35 in. by 48 in., which can be varied on particular requirements. The new unit is claimed to provide all the advantages of expendability, product



protection, economy and handling savings. Complete information on the container may be had by checking No. 5644 on the coupon and mailing it to this publication.

No. 6544—Methallyl Chloride

Methallyl chloride (3-chloro-2-methyl-1-propene) is now commercially available as a new product of Food Machinery & Chemical Corp.'s recently formed FMC Organic Chemicals Division. Methallyl chloride will be found of interest for synthesis of monomers, insecticides, fungicides, fumigants and pharmaceuticals as well as for general use as an organic intermediate, according to company spokesmen. Literature on this subject is available without charge. Check No. 6544 on the coupon and mail it to Croplife.

No. 5650—Seed Treater Attachment

Two different seed treating chemicals may now be applied simultaneously through use of the dual reservoir attachment recently announced by Panogen, Inc. The attachment for seed treaters was de-

Also Available

The following items have appeared in the What's New section of recent issues of Croplife. They are reprinted to help keep retail dealers on the regional circulation plan informed of new industry products, literature and services.

Send me information on the items marked:

- ☐ No. 5644—Container
- ☐ No. 5648—Side-Dump Body
- ☐ No. 5650—Seed Treating
- ☐ No. 5652—Tail Gate
- ☐ No. 6536—Pesticide
- ☐ No. 6537—Film
- ☐ No. 6538—Safety Folder
- ☐ No. 6539—Suction Strainer
- ☐ No. 6540—Growth Stimulant
- ☐ No. 6541—Rotary Mixer
- ☐ No. 6542—Applicator Kit
- ☐ No. 6543—Fertilizer Spreader
- ☐ No. 6544—Methallyl Chloride
- ☐ No. 6546—Folder
- ☐ No. 6547—Booklet

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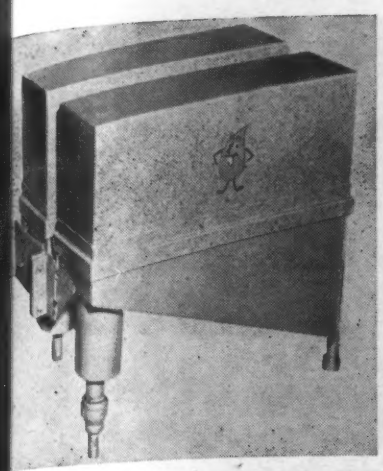


loped so that two physically incompatible materials could be applied at the same time without mixing before they reach the seed, state company officials. They continue: This, for example, permits the seed processor to apply Drinox, the liquid insecticide, and Panogen liquid seed disinfectant with a single trip through the treating equipment. Another feature is that one reservoir may be used to hold a chemical such as Panoram, Arasan, Spergon and Captan for slurry treatment of corn and beans while the other holds a liquid fungicide such as Panogen for treatment of small grain. The operator can switch from one tank to the other almost instantly without losing time for cleaning and changeover." For further information check No. 5650 on the coupon and mail it to this publication.

No. 6542—Applicator Kit

Details of an applicator for water soluble fertilizers and other emulsifiable chemicals are announced by the Manco Chemical Co. The applicator is composed of a complete kit that includes a syphon-principle applicator, applicator hose and spray nozzle. Company officials state that the unit is "inexpensively made of polyethylene with a standard thread, attaches to the end of a garden hose and mixes tap water with concentrates in a gallon jug, bucket or other container." The nozzle has a wide opening to permit the free flow of solution regardless of varying water pressure. A sample kit will be forwarded on request. Check No. 6542 on the coupon and mail it to Croplife.

No. 6540—Plant Growth Stimulant

The availability of the new plant growth stimulant, gibberellic acid, is announced by S. B. Penick & Co. Company officials state that initial work indicates that on certain flowers and ornamentals, gibberellic acid will stimulate stem length and lateral growth, accelerate stem growth on cuttings, increase profusion of blooms, stimulate earlier blooming, promote flowering of plants tending to remain in the vegetative stage and induce flowering of biennials in the first year. Gibberellic acid was isolated by Japanese scientists working on the prevention of a rice disease. Further work by U.S. agricultural scientists indicated that "in only three to four weeks plants treated with the chemical grew three times as tall as comparable untreated plants," the company announcement stated. Further information about gibberellic acid may be obtained by checking No. 6540 on the coupon and mailing it to Croplife.

No. 6537—Apple Mildew Film

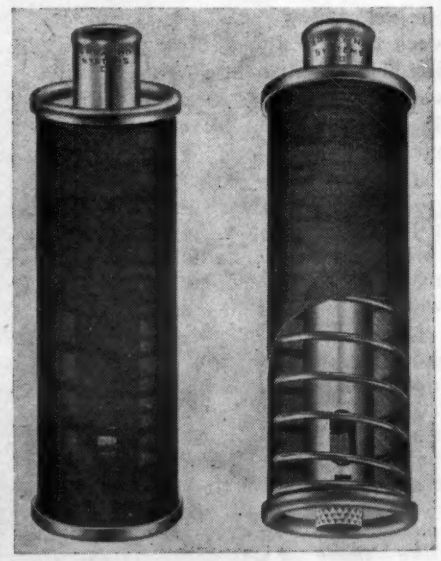
Apple mildew is the theme of a new, educational 16 mm sound motion picture, in color, produced by the department of plant pathology of Cornell University in cooperation with the Rohm & Haas Co. The film, which runs about 15 minutes, depicts the damage caused by powdery mildew and the geographical distribution and climate factors involved. The life cycle of the disease is shown in detail, considerable footage being devoted to photomicrography of infected buds and the conidial and perithecial stages. The importance of thorough and timely spraying for effective control is shown and the film suggests to apple growers that they consult their local extension service representatives or state experiment station for detailed recommendations. The film is intended to be of particular interest to fruit growers, pesticide dealers, gardeners, county agents, vocational agriculture teachers and students. The film is suitable for television presentation and for showing at meetings sponsored by public agencies. Secure complete information by checking No. 6537 on the coupon and mailing it to Croplife.

No. 6536—Pesticide

A new pesticide called Crag Brand Mylone is now being used experimentally to combat three pests that plague growers of nursery stock, tobacco, vegetables and some flowers. The three pests are weeds, nematodes, and several soil diseases. Mylone, formerly called fungicide 974, was developed by Carbide & Carbon Chemicals Co., a division of Union Carbide & Carbon Corp. It is applied before planting either as a water suspenson or dry powder and thoroughly tilled into the soil. Crag Mylone does not require plastic covers. Qualified researchers can obtain test quantities and detailed literature. Check No. 6536 on the coupon and mail it to Croplife.

No. 6539—Suction Strainer

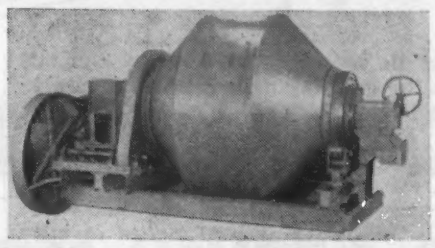
The Spraying Systems Co. has announced a new, low cost suction strainer for use in spray rig tanks. The strainer is made with either



aluminum with a Monel screen or of stainless steel with a stainless steel screen. Practically all farm chemicals may now be handled, including the balanced mixed fertilizers containing phosphoric acid, it is claimed. Fifty and 100 mesh sizes are offered. A hose shank connection is supplied to fit either ⅝ in. OD or ¾ in. OD rubber hose. The hose is slipped over the strainer hose shank and held with a hose clamp. No special fittings are needed. The strainer is easily disassembled for cleaning by turning a knurled screw in the strainer bottom, which releases all parts. It is claimed that the new No. 7130 suction strainer will fit through the opening of any standard container and permits withdrawal of solution to within 1 in. of the bottom. Secure complete details by checking No. 6539 on the coupon and mailing it to Croplife.

No. 6541—Rotary Mixer

The Munson Mill Machinery Co. has announced new features of its rotary mixer used for the production of various fertilizers, insecticides and herbicides. Among the features claimed are: The mixer will blend powders and granules; it will not break up granular clays; spray pipes have been installed in the mixer to spray liquids on the dust or granular materials; the mixers are equipped with an internal vent pipe to expel toxic fumes; they are dust tight; the mixer drum may be heated and will transfer heat



rapidly to the materials to be blended; a stream of cold air for cooling can be introduced into the mixers; they can be used to coat granular fertilizers with insecticide dusts; they will blend various chemical compounds into a homogeneous, accurate mixture in a short period of time with no breakage in the particle size; the mixers are available from 20 to 250 cu. ft. mixing capacity. Pictured is style No. 7 Munson rotary batch mixer (gravity intake and gravity discharge). Secure full details by checking No. 6541 on the coupon and mailing it to Croplife.

CAULIFLOWER DAMAGE

PORTLAND, ORE.—There is a chance that Douglas county cauliflower growers will be able to salvage around 50% of a crop that earlier was believed to be completely damaged by the late January freeze, reports Billy Bulletset, Garden Products Co., owner, who markets most of the crop. Mr. Bulletset, who recently inspected some 100 acres of the March and April variety cauliflower near Roseburg, said the vegetable took 9 degree temperature for three days. He indicated that it will be a few weeks before full extent of damage can be determined.

HYPRO DEALERS

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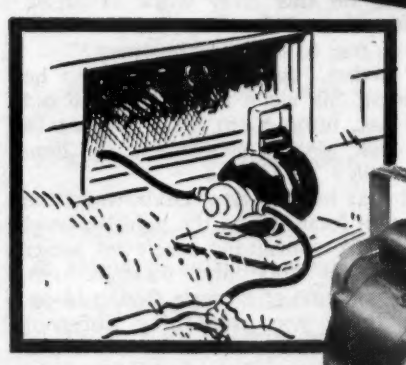
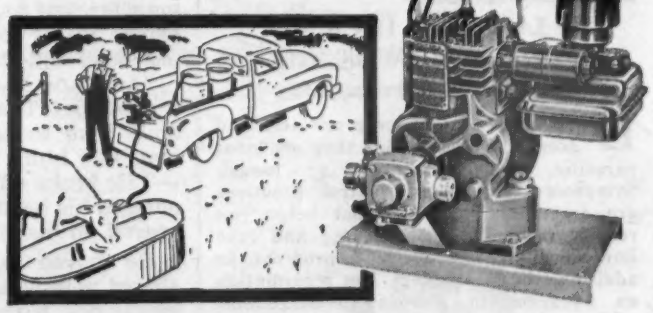
by merchandising HYPRO'S complete pump line



FARMERS ARE BUYING HYPRO pumps for transferring fuel oil, spraying insecticides, wetting down silage, pumping out cisterns, septic tanks, cellars, and many other uses. Make sure you are getting your share of this growing market by displaying these popular items.

AN ELECTRIC PORTABLE pump is hard to beat for liquid moving jobs anywhere around the farmyard. Your choice of two models with capacities to 10 gpm. Pump ports fit standard garden hose.



A LIGHT WEIGHT GAS-ENGINE PUMP is handy anywhere for filling barrels and tanks, draining ditches, spraying weeds, watering seed beds, etc.

TIRE FILL KIT

This self-priming, bronze pump, complete with electric motor, hoses, strainer and tire valve adapter is an economical unit for filling tractor tires with liquid ballast. Pump is also usable for wetting down silage, washing trucks and pens, and other uses.

USE THESE CUTS IN YOUR ADS

Glossy photos or newspaper mats for advertising these and other HYPRO pumps are available free to dealers.

WRITE FOR BIG NEW FREE CATALOG

HYPRO PUMPS

HYPRO Engineering, Inc.

700 39th Ave. N.E., Minneapolis 21

Doing Business With

Oscar & Pat

By AL P. NELSON
Croplife Special Writer

"Ach du Lieber! Was ist los?"

Oscar Schoenfeld, rotund, balding, pinch-penny partner in the firm of Schoenfeld & McGillicuddy, farm supplies, had just opened the front door of the store and stood gazing at the main aisle.

Before him stretched a pathway of white crumbly stuff, within a frame of 2 by 4 in. lumber, supported each six feet by cross pieces.

Oscar's startled eyes focussed on a placard, tacked to a stick at one edge of the wooden frame. The copy read, "Your Soil Needs Lime . . . Order Some Today." Another sign said: "State Reports Indicate Most Soils in This Area Need More Lime . . . Order Lime Today."

"Dumheit!" cried Oscar, referring of course to his partner, Pat McGillicuddy. "He puts lime in a sidewalk on the floor. How crazy can he get with his ideas? Sell, sell, sell! That is all he wants to do. And, ach, us with so many delinquent accounts to collect."

But, of course, there was no one in the office at the moment to hear Oscar's violent tirade. This was because it was 6:45 a.m., the time when Oscar always arrived, ahead of anyone else. By getting to the office early, Oscar set an example for everyone else, and he loved that. Being early, too, gave him time to strut up and down, lecture his partner Pat on all his business deficiencies, and there was no rebuttal.

Sometimes in these early morning minutes, Oscar would swear a little in German, walk over to Pat's desk, littered and stacked as usual with magazines, folders, penciled notes—in direct contrast to Oscar's neat desk, back to back with Pat's. And then Oscar would give the absent Pat a dressing down, after which Oscar would move to his desk, sit in his swivel chair and glare at Pat's empty chair, as if by the very fury of his stare he could cow the easy going Irishman into running the business the way Oscar wanted it run.

Oscar stepped gingerly over to the uncovered floor area, avoiding the agricultural lime which led directly to a big order counter.

"Ach," he cried, "the whole store will get dusty and messy from this lime. That Irisher! He and a carpenter did this last night when I was gone home. That dumheit knows he has to do this dirty work at night. Himmel, do I have to put in night hours, too, to save this business?"

Fretting, fuming, grumbling, he took off his worn mackinaw and old felt hat, hung them up and went to his desk, glaring sidewise at the lime sidewalk.

He sat in his swivel chair, and then his eyes focussed on the goldfish bowl ordinarily containing retrieved paper clips from floor and wastebaskets. That was one of Oscar's saving ideas. But there was something different about the old goldfish bowl this morning, and Oscar choked when he saw it.

The bowl was filled with white lime and against the glass here and there one could see a few paper clips.

Oscar let out a roar like a sleeping man pricked hard with a needle. He leaped to his feet, grabbed the goldfish bowl and stared at it.

"Ach, and he does this and makes fun of me! That, that Irisher. Why do I have to be in business with a man like him? Some day, some day —" He broke off as a devilish thought entered his head, and a tiny smile appeared on his face.

He moved to Pat's desk, glanced almost approvingly at the stacked up magazines, booklets and penciled notes. Then, like a good housewife with a sprinkling can in a flower garden, Oscar began to sprinkle and pour whitish-yellow limestone and paper clips from the goldfish bowl over the top of Pat's desk.

He coughed from the rising cloud of dust, but even this could not erase the trace of a smile on his thin lips.

"Ach, I am wasting ten cents worth of lime, but it is worth it," Oscar chuckled, "and I will now pick out most of the paper clips from the lime."

He had just finished his task and placed the goldfish bowl back on his desk with its retrieved paper clips, when he heard a car drive up. He looked out the window and saw Pat McGillicuddy get out of his automobile.

Oscar smiled, then put on his coat and hat, and walked outdoors.

"I am going down to the restaurant for a cup of coffee and a sweet roll," he told Pat in a matter of fact tone. "I may be gone 10 or 15 minutes."

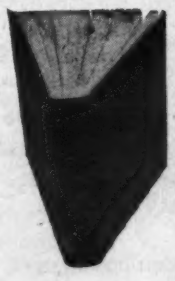
"Oh, all right," said Pat, watching his partner walk away jauntily. "I wonder what happened to make Oscar so confident this morning?" he said to himself. "I was sure he would be mad as a wet hen about that lime sidewalk. And I came down early just to keep him from tearing it up." He shrugged his shoulders. "Well, it just goes to show, begorra, that you never know how people will act—even Oscar."

field crop diseases . . .

how they occur
how to prevent them
how to control them

This practical guide shows you how to prevent, diagnose, build resistance to, and treat diseases of field crops. It gives you scientific ways to keep crop ailments under control . . . helps you obtain high-quality yields and cut losses from crop fluctuations. Every major crop plant is covered—cereals, legumes, grasses, and fiber plants.

Just Published



DISEASES OF FIELD CROPS

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By JAMES G. DICKSON
University of Wisconsin
517 pages, 242 illustrations, $8.50

DISEASES of each crop are arranged according to whether they are non-parasitic, virus, bacterial, or fungal. Symptoms and tested control practices are described in a way that helps you readily recognize each disease and take immediate steps to check its progress. In addition, the book gives you information on advances in disease investigations, such as those covering nematodes, newer viruses, and genetic factors that condition resistance to disease. Also shows the influence of moisture, temperature, crop sequence, and other factors affecting its cycle.

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By RAYMOND ROSSON
County Agent, Washington County, Tenn.

Last week a group of scientists, agronomists, farmers and county agents, met on an old, rough, worn-out, steep, gullied, abandoned farm of just a few years ago. But last week most of the gullies were being filled, it wasn't near so rough, but it was steep and it certainly looked like anything else than being worn out.

This old place was just about the greenest place for miles around . . . it had a covering of orchard grass, clover and alfalfa, and as the old saying goes, "It kinder made your mouth water."

But speaking of water, well, we'd had a very heavy rain the night before, but none of the water had "run-off." The grass roots had held it right where it had fallen and it soaked into the ground, just where it should have gone.

The senior scientist said, "Acres like these are chuck full of power at the kilowatt level" and one of the young farmers came through with this, "Yes, Mr. Scientist that is true, but we believe there is still a greater power being developed right out here on this land, because it is holding water, holding plant food, holding possibilities for a higher economic level, making it possible for a training leadership to develop individuals and communities."

Another farmer made this observation, "We are going through some momentous changes that have resulted in tremendous problems, and they are not all agricultural: they are public problems. Others besides farmers, have to understand them."

"That's correct," said one of the county agents. "We can't be agricultural isolationists and have it succeed; we need good public relations; teamwork. We need other people pushing to maintain our democratic agriculture; to keep it the most efficient in the world, helping to keep our customers the best fed in the world, and helping to keep our agriculture one of the very largest buyers of industrial products."

"Power, to its last particle, is duty."—John Foster.

NEW CONTAINERS—The new "agritainers" are shown above in the three and five gallon sizes by D. W. Galbraith, who adapted these containers to use with small lot dispensing of liquid fertilizers and insecticides.

Plastic Package Developed for Liquid Fertilizers, Pesticides

SAN FRANCISCO — Square polyethylene plastic liners in cardboard box containers are something new in merchandising liquid fertilizers and insecticides. These containers in either three or five gallon size, are a one-way package and fit ideally into the new rulings that demand that containers of highly toxic types of insecticides be destroyed. The container can be burned readily and completely in a matter of minutes.

The "agritainer," as it is called, is for growers with small or limited fertilizer demands. Liquid fertilizers can be utilized by using the container as a distributor. This is accomplished by pulling out a cut-away portion on the back that forms a hand grip while another cut-away on the top and front of the carton allows the elongated lip of the liner to act as a pouring spout. By using the handle and spout the user can pour the contents directly on the soil if desired, or in the case of insecticides, into the spray medium without danger of spillage.

Holding the new package, above, is D. W. Galbraith, Agriform Company of Northern California, Woodland, who saw the container used successfully by dairymen on the Eastern Seaboard for milk distribution.

Spray Increases Olive Size, Specialist Says

DAVIS, CAL.—The role of agricultural chemicals in increasing the size of olives was revealed recently by H. T. Hartmann, olive specialist for the University of California's Agricultural School at Davis.

Speaking before a gathering of California olive growers at a recent meeting, marking Olive Day, Mr. Hartmann reported that the use of naphthaline acetic acid as a spray is a very effective method of thinning heavy crops and thus increasing the size of the remaining fruit. Mr. Hartmann told his audience that 2,4,5-T also gave good results along these lines.

The event which saw some 250 olive growers and others of allied interest in attendance was sponsored jointly by the University and the Farm Bureau Olive Research Committee.

Besides Mr. Hartmann, other specialists in agricultural chemicals were heard from on various other phases of olive growing and marketing.

E. M. Stafford, member of the entomology department discussed the use of insecticides to control the American plum borer. Mr. Stafford found that DDT wettable powder, applied as a spray on all new graft areas, gave good protection against this pest.

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9. Test plot campaigns with free plot and row signs.
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11. Advertising postal cards furnished for your own mailing list.
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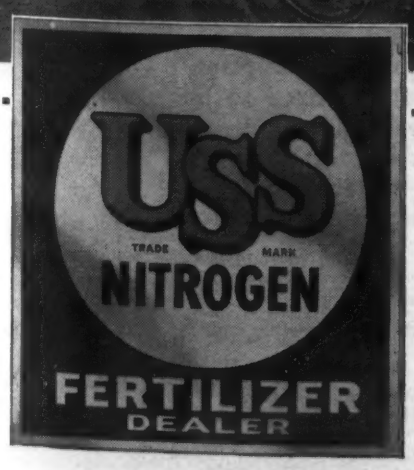

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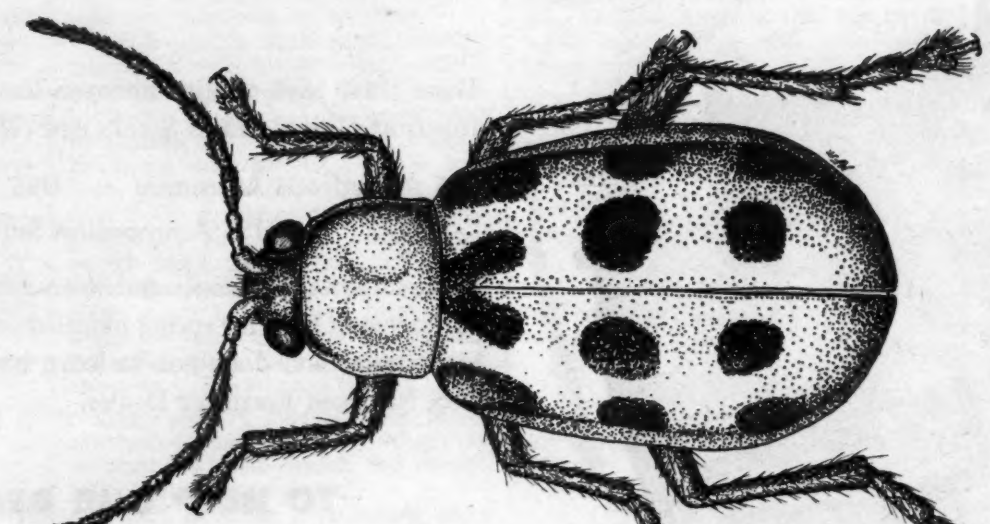
BUG OF THE WEEK

Mr. Dealer--Cut out this page for your bulletin board

Spotted Cucumber Beetle



How to Identify

As noted in the illustration, the most conspicuous characteristic of the spotted cucumber beetle is its spots. Next, however, is its antennae, usually about half to two thirds as long as the body, and nearly black in color. The bug's body itself is yellowish, or yellowish-green. The head is black.

Life History of Beetle

Females deposit their eggs in the ground near the bases of plants. Upon hatching, the young larvae bore into the roots and the underground portions of the plant's stem. They become adults during July. In the southern portion of the country, the pest has two full generations, but usually only a partial second generation in the north. The spotted cucumber beetle hibernates in nearly any kind of shelter, but seems to prefer the bases of plants. Beetle activity begins early in the spring, when the bugs are flying about during the first days of 70° or more of temperature. In the larval stage, the spotted cucumber beetle is known as the southern corn rootworm which does great damage to roots.

Damage Done by Beetle

The range of plants attacked by this pest is large, with estimates running as high as 200 weeds, grasses and cultivated crops. The pest eats large, irregular holes in the foliage of beans and cuts off the growing tips. When the leaves are parted, the adult bugs fly away. Frequently, the stems of plants are girdled by many feeding beetles at or near the surface of the ground, so that the plant is eventually killed. In addition to its harming cucurbits, the adult bug is a constant pest of string and Lima beans, cabbage, tomato, eggplants, beets, asparagus, potatoes and peas.

Control of the Cucumber Beetle

Since this pest lays its eggs in fields after the corn is up, there is no way to rid the soil of the larvae. Cultural methods include late planting on land which has been plowed early in the spring or fall and on which vegetation has been kept at a minimum. Rotation of crops has little value in the control of this species. Various insecticides have been named by USDA for control of the beetle, but since much of this application would be made on crops slated for human consumption, older recommendations may have to be revised to avoid the possibility of illegal residues remaining on harvested crops. County agents should be consulted before pesticide programs are adopted for control of this pest.

The illustration of spotted cucumber beetle was furnished by the artist, Marvin Frost, Jr.

Previous "Bug of the Week" features have been reprinted in attractive 24-page booklet, priced at 25¢ single copies; reduced rates in quantities. Write Croplife Reprint Dept., Box 67, Minneapolis 1, Minn.

FARM SERVICE DATA

Extension Station Reports

Growth regulator chemicals may help orchardists get more and larger sweet cherries from their trees in the future, according to two Oregon State College horticulturists.

In a three-year experiment with Royal Ann cherry trees, Quentin Zielinski and Ralph Garren Jr., found that proper use of certain plant hormone sprays increased the weight of individual cherry fruits as much as one third. The added weight was found to be due to an increase in the fleshy part of the fruit—not to larger pit size.

The research workers also were able to increase the number of blossoms setting fruit on the trees in the spring. Flavor, color and other quality characteristics of the cherries didn't seem to be affected.

★

Cattle lice, cattle grubs, sheep ticks and ear ticks are reducing ranch and farm profits in Utah, according to Paul Daniels, Wasatch County agent.

Some far sighted cattle owners and dairymen treated for lice last fall knowing how livestock pests build up in the winter.

Mr. Daniels says that cattle grub control time is approaching. This pest appears earlier in Utah's Dixie than in the northern valleys or at the higher elevations.

Meanwhile, Dr. G. F. Knowlton, Utah State Agricultural College entomologist, points out that livestock pests have cut milk, meat and butter production by $500 million a year in the United States, according to best estimates. He says Utah stockmen take their full share of this loss.

★

Late fall applications of nitrogenous fertilizers to California foothill ranges have consistently hastened the growth of native forage plants both in fall and spring, according to Horton M. Laude, University of California professor of agronomy, and Lester J. Berry, University range improvement specialists, in a joint announcement made recently.

This hastening of growth has resulted in a winter forage production which may be advanced as much as two months. Also, the team found, the herbage produced by fertilized plants is not subject to frost damage to the same extent as that produced by unfertilized plants.

According to Mr. Laude and Mr. Berry, moisture, temperature and nutrient supply primarily govern the production of range plants, but in California, on the foothill areas under 1,000 feet in elevation and near the central valleys, the climate is such that favorable temperature, moisture and nutrient supply do not necessarily occur together.

The two researchers found that soil moisture is usually highest during the winter months when temperatures are at their lowest. The more favorable growing conditions occur in the autumn soon after the first rain and again in the spring when the likelihood of rain is declining.

The report of the two men goes on to cite the fact that nutrient supplies also reflect the seasonal effect. In the case of nitrogen, the amount naturally available increases as the soils warm in the spring. Such conditions combine to produce the usual flush of spring growth.

Because the most favorable growing temperatures occur when there is little rain and the most favorable moisture conditions exist when the temperatures are too low for rapid natural growth, fertilization stands out as an exceedingly important management tool.

Fertilization provides a means of better utilizing features of the prevailing climate, for if adequate nutrients are provided the temperature conditions which exist during the most favorable moisture periods are seldom too low to prevent growth.

★

There has been a steady increase in the average yield of lint cotton per acre in New Mexico for the past 35 years, 1922 to 1956 inclusive, according to figures released by Glen Staten, agronomist and cotton breeder with New Mexico A&M College's Agricultural Experiment Station.

For the 35-year period, the average increase in yield has been 11.02 lb. of lint cotton per acre per year; or, on the average, an increase in yield of 386 lb. of lint cotton for the 35-year period.

Mr. Staten says a number of factors have influenced the yield trend. Commercial cotton production on a large scale began about 1922. Consequently, in this early experimental period, cotton was a new crop for most growers. Yields increased as growers acquired more skill in handling the crop.

"Since 1926, when the New Mexico Agricultural Experiment Station and United States Department of Agriculture, cooperating, introduced College Acala, there has been a steady succession of improved strains, culminating in the release in 1951 of Acala 1517C which has been by far the best adapted variety available to the state to this date," the agronomist states.

"The improved varieties have been accompanied by more intensive cultural practices. There has been a tremendous increase in the use of fertilizers on cotton, particularly nitrogen. This has also been true for the use of insecticides, which are now used in large quantities where in the 1930's only negligible amounts were consumed."

★

There should be a surplus of nitrogen in the soil for new cotton planting and this surplus should be in the soil before the pre-plant irrigation, according to Lyman R. Amburgey, extension specialist in soils for the University of Arizona. He advises farmers to drill in or broadcast 30 lb. of nitrogen per ton of old cotton stalks, or a minimum of 50 lb. of nitrogen per acre, as they prepare seedbed.

Fertilizer recommendations for cotton vary from 50 to 150 lb. of nitrogen, and from 0 to 50 pounds of phosphoric acid per acre throughout Arizona's cotton counties. Single or split applications are recommended for nitrogen, according to the area and the soil texture.

★

Dodder control in alfalfa seed fields is one of Utah's most troublesome weed problems and the most serious threat to the state's alfalfa seed industry, entomologists at Utah State Agricultural College point out.

Research on control of this parasitic weed by the Utah Agricultural Experiment Station has shown that small, widely scattered dodder patches can be most effectively and economically killed by spraying the dodder and infested alfalfa with an aromatic weed oil or dinitro-fortified oil-water emulsion.

Experiments have shown that the alfalfa top growth is killed but the roots are uninjured and produce normal regrowth.

In heavily infested fields, spraying the dodder-infested alfalfa stubble after the first crop has been removed with 80 to 120 gallons of an aromatic weed oil will reduce the dodder 60 to 80%, scientists report.

Stubble treatments with a one to 10 dinitro-fortified oil-water emulsion at 120 gallons per acre will reduce dodder 50 to 65%.

The agriculture experiment station is requesting additional funds from the Utah Legislature for a more intensive study of ways to control dodder.

Because dodder is a saprophite and derives its food from the alfalfa plant, a selective chemical must be found that will kill the dodder without serious harm to the alfalfa, entomologists said.

★

Dr. H. S. Telford, chairman of the Washington State College department of entomologly, reports favorable results in tests at the college of Kelthane, a new mite-killing chemical.

The tests have shown the chemical effective against European red mites, the two-spotted mites and their close relatives, clover mites and rust mites. The material is expected to be available for use this year.

★

The growth stage of certain "indicator plants," found growing with big sagebrush, can tell the rancher when to spray for the most complete kill. This information is the result of experiments carried out near Elko, Nev. by Dr. J. Robertson, range ecologist and H. P. Cords, assistant agronomist, Max C. Fleischmann College of Agriculture, University of Nevada. Perhaps the most reliable of the indicators is Poa secunda, commonly called Sandberg bluegrass.

Highest mortality of the sagebrush resulted from spraying during the period which began well ahead of the emergence of the seed head of Sandberg bluegrass and ending with the loss of green color from the grass.

Two growth regulator type sprays were used—2,4-D and 2,4,5-T. Results showed 2,4,5-T more effective at the earlier part of the period, and 2,4-D to be equally effective in the latter part of the period. Spraying was successful as early as mid-April and as late as mid-June. The experiments were made on a site of 5,400 foot elevation. Part of the site had old stands of sagebrush, and the rest consisted of young stands which had invaded a reseeded field.

The reseeded area had been planted to crested wheatgrass and other compatible grasses in 1944, and had been heavily grazed, allowing sagebrush to re-establish itself. Results of the work show big sagebrush can be controlled by growth regulators such as 2,4-D and 2,4,5-T during the early part of its growth in the spring, according to Dr. Robertson. This treatment is effective on soil and rainfall conditions that are favorable for crested wheatgrass.

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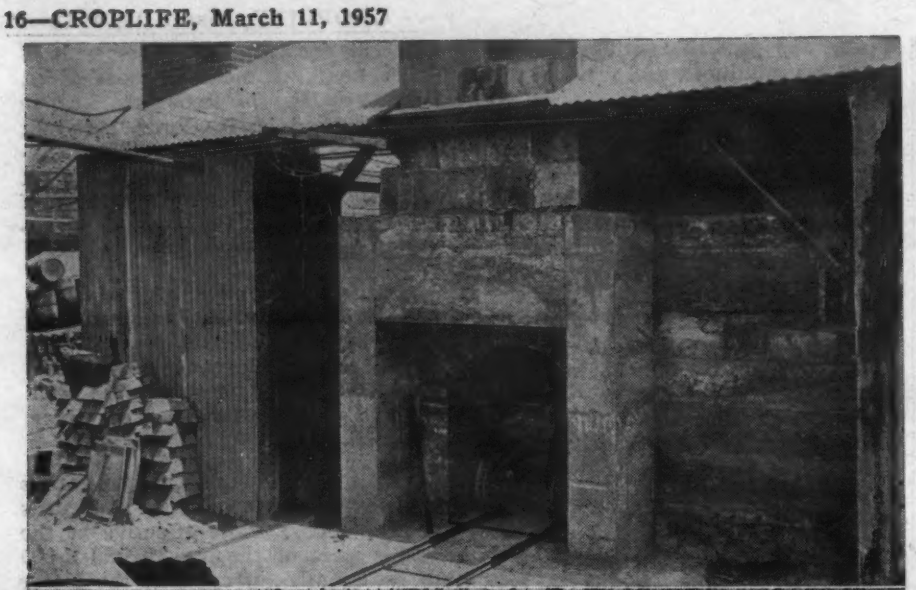
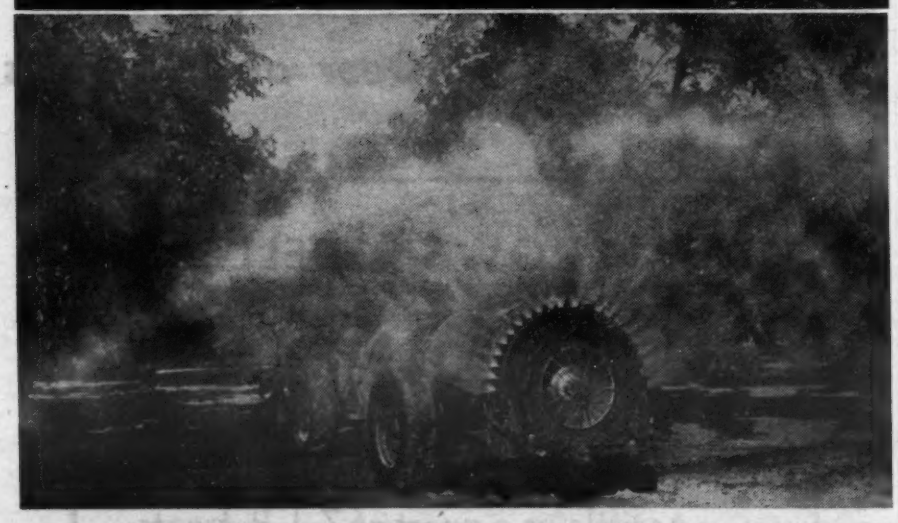




ANNIVERSARY OBSERVED . . .

Calspray Looks Back Over Half Century of Pesticide Progress

RICHMOND, CAL.—California Spray-Chemical Corp. is observing its 50th anniversary at this time, and the occasion gives cause to look back over a half-century of pesticide development, particularly on the West Coast, in which the company has played a prominent part.

With its original establishment based on controlling insect pests in California orchards, the company has continued in this role continuously since 1907 when E. E. Luther and W. H. Volck started the firm in Watsonville, Cal. The specific impetus which led to the formation of the company was a patent held by Mr. Volck for a new method of manufacturing lead arsenate and an improved basic lead arsenate.

At that time, only three insecticides and one fungicide were generally available to farmers. These materials were paris green, lime sulfur, lead arsenate and Bordeaux mixture. Having experienced the devastation caused by the Colorado potato beetle and San Jose scale, and seeing increasing losses to other pests, the farmers were more than ready for more effective control methods.

Calspray's first contribution to scientific pest control was the invention of a method for obtaining lead arsenate with the use of litharge rather than lead acetate, thus making this insecticide available to farmers more economically.

A series of inventions, some 20 in all, having to do with improved methods of formulating basic materials for use as insecticides are attributed to Mr. Volck, among them the aforementioned basic lead arsenate which was first hailed by central California apple and, later, walnut growers as a safe and effective control of the codling moth. Apricot and peach growers found it effective against twig borers.

Mr. Volck's development of dormant and summer oil sprays, still in use today, was probably his greatest contribution in terms of its importance to the agricultural scene at the time. These petroleum oils controlled black scale and red spiders on citrus and San Jose scale on deciduous fruit trees without injury to foliage. The Volck phytonomic oil took the place of fumigation throughout the citrus industry, and the dormant oil sprays replaced the use of kerosene for control of San Jose scale, spider and codling moth eggs in Northwest apple orchards.

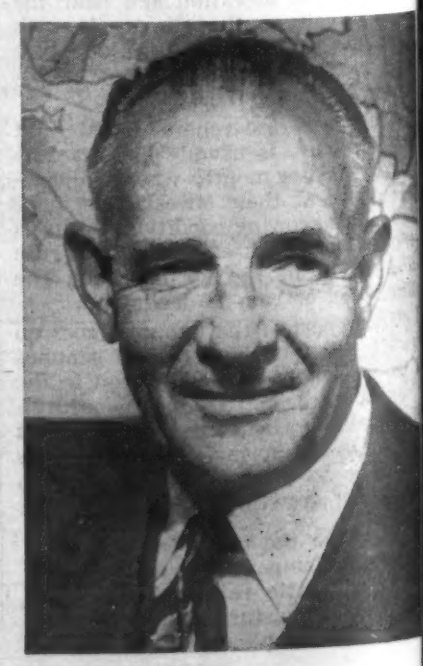
"It has been said that Volck ended the era of wormy apples," a Calspray spokesman says. "So sure was his partner Mr. Luther of the Calspray products, that he reportedly offered one dollar a worm for any worms found in orchards sprayed with Ortho lead arsenate and Volck or Orthol-K oil sprays. Apparently the young company with its limited resources didn't lose anything with this challenge, for company expansion began soon after with the opening of sales offices in Portland, Yakima, Fresno, Santa Rosa, Whittier, New York and Florida."

An important date was 1919, when Messrs. Luther and Volck made the decision to furnish "scientific pest control programs" rather than merely to sell chemical supplies per se. They hired only technically trained salesmen who could advise and educate the grower to the proper use of agricultural chemicals. This policy has been maintained by the company ever since.

In 1929, Volck Garden spray was developed leading to the formation of a full garden line (16 products) by 1931. Purchase of the National Chemical plant in Pittsburg, California, in 1930, the construction of an oil spray plant in Richmond and a second in Elizabeth, New Jersey, to service the Eastern market were other advances. Shortly thereafter, the business was

PAST AND PRESENT AT CALSPRAY—The crude beginnings of the pesticide industry are noted in the top pictures at the left. Above is kiln used in manufacturing lead arsenate at Calspray's first plant at Watsonville, Cal. in the early 1900's. The next photo shows how old Dobbin figured in the slow and laborious spraying methods current in the 1900's. However, these rigs marked the beginning of controls for black scale and red spider on citrus and San Jose scale and spiders on deciduous fruit trees. The third picture, taken in late 1920's, shows early experimental rig utilizing the fog-spray system, developed by Calspray. Fourth photo at left is modern speed sprayer, operated by one man, and capable of covering about three orchard acres an hour. Using an old-time barrel and pump rig as pictured above, it would have taken two men about fifteen hours to do this job.

Below, left, is the late W. H. Volck, co-founder of Calspray. He died in 1943 with a record of some 30 inventions having to do with the development of new types of pesticides and formulations. His idea of oil sprays for dormant and summer use, developed in the 1920's, is still in common use. At the center below is a general view of Calspray's 40-acre plant at Richmond, Cal., and at the right, Arthur W. Mohr, president of Calspray, who makes his headquarters at Richmond.



rganized as "California Spray-emical Corporation" with the ndard Oil Co. of New Jersey and ndard Oil Co. of California to-her owning 51% of its valuation. 1947 it became a wholly-owned sidiary of Standard Oil of Cali-nia and in 1954 became an operat-company of Standard.

n reviewing the milestones in the pany's half-century history, its kesmen consider these events to of particular significance:

The development of lindane, 100% e gamma isomer of BHC; develop-nt of Tetraethylpyrophosphate PP) for control of red spider es, aphis, thrips, leafhopper mphs, and other sucking insects, h little problem of residues; de-lopment of a special filler to en-e TEPP to be used in dust form well as by fog-spray application; velopment of DDT formulations in uid, dust and wettable powder rms and improvement of dust-nding methods to obtain micro-e particles for more effective dusts; d the development of captan.

Over the years, Calspray has grown o one of the largest companies ecializing in agricultural chemicals, d its sales volume is among the gest of all companies dealing in sticides. In addition to the 40-acre nufacturing plant in Richmond, lifornia, there is a Calspray plant South Plainfield, New Jersey; St. uis, Missouri; Orlando, Florida; d a fifth manufacturing plant has t been completed in France. The mpany operates 46 dust mills and uid formulating plants in the U.S., nada, Mexico and Puerto Rico and intains a total of 82 district and anch offices in the U.S. and abroad.

Calspray's multi-million dollar nt food plant in Richmond, capable producing 1,375 tons of plant foods r day, provides western states with dily-available fertilizers in a vari-y to meet most farm needs.

isease Hits Flax in oastal Bend Area

BEEVILLE, TEXAS — Growing x in the Coastal Bend area is eeting with many diverse problems. e latest is a disease being called urly top," which is believed to be used by a beet leaf hopper. This pper has done severe damage to x in California and has once be-re infested vegetable fields in the inter Garden area of Texas, but s never been found in the local x fields.

In order to determine if the beet af hopper is responsible for the seased plants, a group of special-ts is making surveys in this area. me of those conducting the study e R. A. Hall, superintendent of e Beeville Experiment Station; r. I. M. Atkins, small grains re-arch at Texas A&M College; R. A. rederiksen, U.S. Department of griculture plant pathologist, St. ul, Minn.; Lucas Reyes, agrono-ist at the Beeville Station; M. C. trell, USDA Agricultural Re-arch Service, Texas A&M College, d T. P. Cassidy, entomologist as-gned to flax research, USDA, rownsville, Texas.

Many observers are pessimistic out the future of flax in the Coast-Bend. Eight years ago the acre-e in flax was 350,000, but has now opped to less than 25,000.

SOUTH CAROLINA PROGRAM

CLEMSON, S.C.—A 10-point 1957 ate Agricultural Program for South rolina was recently announced by e Clemson Extension Service and e State Agricultural Committee. e theme of the program is "Farm d Home Development" and prac-es suggested for achieving the r-all goal are grouped under the points of farm and home develop-nt, crops, grassland farming, live-ck, dairying and poultry, forestry, ts and diseases, marketing, family ng, rural youth and community elopment and public affairs.

Texas Gulf Sulphur 1956 Revenues Decline from 1955

HOUSTON—Texas Gulf Sulphur Co. recently reported gross revenues from sales of $84,573,412 for the year ending Dec. 31, 1956, compared with $93,589,045 in 1955.

Net income after deducting charges for depreciation and amortization, exploration costs and estimated Federal income taxes amounted to $28,135,880, or $2.81 per share on the 10,020,000 shares in the hands of stockholders. This compares with earnings of $32,356,404, or $3.23 per share for 1955, based on the same number of shares. The net income and gross revenues of 1956 were exceeded only by those of 1955 and 1954.

Last year's decline in gross revenues was due principally, according to Fred M. Nelson, president of the company, to a decrease in export shipments and a reduction in export prices, while domestic shipments were adversely affected by the steel and longshoremens' strikes and by reduced requirements for summer fertilizers. The decline in net income also reflects the increased charges resulting from an expanded program of exploration and development.

As the result of its large production during the year, the highest in its history, the company added substantially to its stockpile. The bulk of the production was by the Frasch process from its Newgulf, Moss Bluff and Spindletop plants in Texas. One of the company's subsidiaries began operation of a new Frasch process plant at Nopalapa Dome on the Isthmus of Tehuantepec in Mexico in February, 1957. Another, the fifth postwar plant to be built by Texas Gulf Sulphur Co., is under construction at Fannett Dome in Texas, and is scheduled for operation in 1958.

Drilling offshore from Galveston, on leases from the state of Texas, has proven the presence of sulphur, but further drilling during 1957 will be necessary to determine the extent of the area of the sulphur deposit. Other exploration projects of the company include diamond drilling of a sulphide ore body in New Brunswick, Canada, and exploration in Sicily, the mainland of Italy, Ethiopia and Alaska.

Kansas Cooperative Adds Representative

OTTAWA, KANSAS—The Ottawa Cooperative Assn. has announced that C. Raymond Smith has been hired to represent the firm as a farm salesman and public relations man.

Mr. Smith will visit farmers to help them with their problems concerning fertilizer, seed, feed, and will also assist them in taking soil samples from farms. He will also be available for community meetings, with programs and films, concerning fertilizer and other items.

Before joining the cooperative firm, Mr. Smith had been employed at the Shaw Hatcheries at Ottawa for the past seven years.

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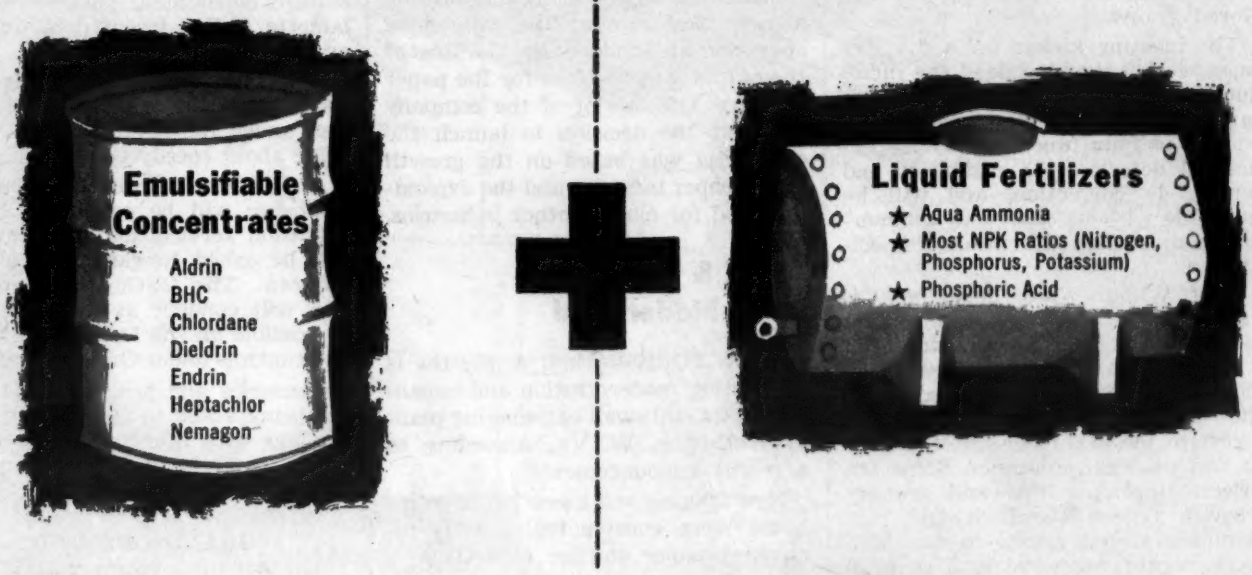

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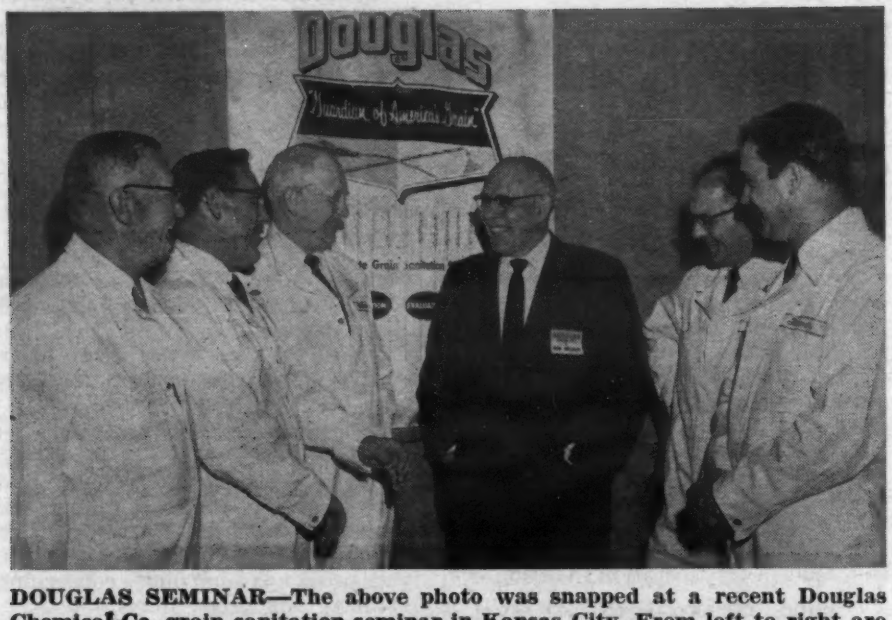


DOUGLAS SEMINAR—The above photo was snapped at a recent Douglas Chemical Co. grain sanitation seminar in Kansas City. From left to right are Robert H. VanDoren, Douglas president; William C. McCaslin, executive vice president; Barney Mahoney, sales manager; Prof. Donald Wilbur, Kansas State College; Ward A. Graham, technical director, and Donald G. Farmer, director of sales and advertising.

Entomologist Conducts Douglas Grain Sanitation Seminar

KANSAS CITY—Salesmen and executives of the Douglas Chemical Co. of Kansas City, Mo., became students again as Prof. Donald Wilbur of the Kansas State College department of entomology led the group in a discussion of the habits and behavior of some ten grain destroying insects that annually damage stored wheat, rice and other grains. The Douglas firm manufactures insecticides used in the fumigation and preservation of stored grains.

The meeting kicked off a five day sales session that heralded the introduction of a new Douglas Grain Sanitation Service. The new service will consist of four functions: 1) inspection, 2) detection, 3) evaluation and report, 4) correction, and will be available without charge to commercial grain storage operations immediately.

Prof. Wilbur, whose department is affiliated with the stored grain insect laboratory of the U.S. Department of Agriculture, was guest speaker at the Douglas sales meeting. He explained that grain sanitation is of vital interest to the grain's owner, the miller and the final consumer. Some ten insects, including rice and granary weevils, reduce the bulk and contaminate stored grains in the Midwest region every year. The principles of fumigating grain (and of gas circulation) are well established but not widely disseminated, Prof. Wilbur stated. He combined group discussions with laboratory exercises and demonstrations during the all day meetings.

Douglas officials said that they hope that their new free grain sanitation inspection service will enable the commercial storage interests of the country to better combat insect infestation as well as to help them comply with the stricter standards demanded of commercial storage.

Firm to Establish New Clay Facility

SANDERSVILLE, GA.—American Industrial Clays, Inc., is establishing a new clay mining and processing operation at Sandersville, Ga. Most of the output will be clays for the paper industry. Officials of of the company say that the decision to launch the enterprise was based on the growth of the paper industry and the expanding need for clay in other industries.

Arkell & Smiths Bag Plant Modernized

NEW YORK—Arkell & Smiths is completing modernization and expansion of its multiwall bag-making plant at Wellsburg, W. Va., according to a recent announcement.

New flooring and a new paper warehouse were constructed, greatly increasing paper storage capacity.

Facilities were expanded to accommodate new equipment for manufacturing the company's multiwall, the "Step-Flex" stepped-end bag.

AACCO Appoints Chemical Engineer, Organic Chemist

NEW YORK—A chemical engineer and an organic chemist have joined the staff of the research and process development department of the American Agricultural Chemical Co.

James A. Taylor, 50, formerly head of the department of chemical and metallurgical engineering at Wayne University, Detroit, has been named research chemical engineer. He holds a doctorate in chemistry and chemical engineering from the University of Washington, Seattle.

Bernard Buchner, 35, formerly senior organic chemist for the Koppers Co. in Pittsburgh, has been named research organic chemist for the A.A.C. Co. He holds a doctorate in organic chemistry from the University of Indiana, Lafayette, Ind.

Oregon Plans Fruit Moth Control Project

PORTLAND, ORE.—Oregon's Department of Agriculture and Oregon State College have joined forces to control the Oriental fruit moth through a battle plan which they hope will receive the backing of state fruit growers, canners and freezers.

The reason for the sudden interest in the pest is that it is a serious threat to peach orchards and was found in at least five Willamette Valley orchards last summer.

The state agriculture department, the extension service and experiment station formulated a five-point battle plan during a recent Salem meeting. The new program will see the agriculture department pushing its Willamette Valley insect detection program.

Wherever the fruit moth is found the department will take prompt action under the horticultural laws to bring about speedy control measures.

An Oriental fruit moth control campaign will be conducted by the extension service, and fruit growers will be asked to carry out a spray program. The OSC experiment station will conduct as much research as possible on the insects' life history and controls under Oregon conditions.

Canneries and processing plants are being asked to sterilize all packing lugs with live steam this coming season or fumigate by an improved method.

GRAND OPENING

GRINNELL, IOWA — A grand opening was staged here recently by Gould's Feed & Farm Store. Curt Gould is owner of the firm located at 811 Fifth Ave.

Charles C. Yent

Charles C. Yent To Head Production at Diamond Black Leaf

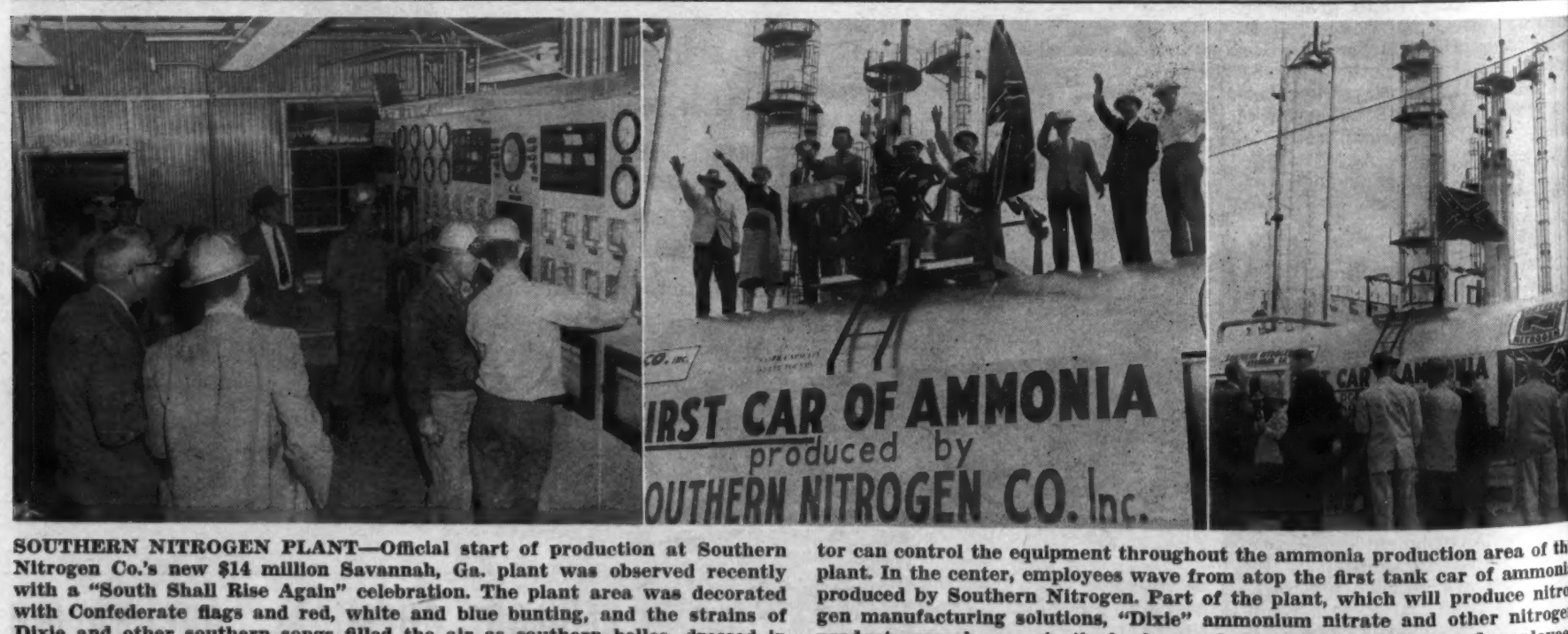
CLEVELAND — Appointment of Charles C. Yent, of Richmond, Va., to the position of manager of manufacturing operations for Diamond Black Leaf Co., Cleveland, was announced here recently by George V. Dupont, general manager.

At his new post, Mr. Yent, a veteran of 16 years' experience in agricultural chemicals development, research and formulation, will be responsible for engineering and production. Diamond Black Leaf has plants in Richmond; Louisville, Ky.; Montgomery, Ala., and Des Moines, Iowa.

A native of Indiana, born in Jeffersonville, Mr. Yent was graduated in 1941 with a bachelor's degree in chemical engineering from Speed Scientific School, Louisville, then joined Tobacco By-Products & Chemical Corp. there as a research chemical engineer.

After four years' service as a lieutenant in the Navy, Mr. Yent returned in 1946 to the Tobacco By-Products organization, which subsequently became the Black Leaf Division of Virginia-Carolina Chemical Corp. He held a number of other important posts at its various plants during the next eight years.

Since March 1, 1955, when Diamond Black Leaf Co. was formed to carry on the manufacture and marketing of Black Leaf brand pesticides, Mr. Yent has been assistant manager of the research and development department located in Richmond.



SOUTHERN NITROGEN PLANT—Official start of production at Southern Nitrogen Co.'s new $14 million Savannah, Ga. plant was observed recently with a "South Shall Rise Again" celebration. The plant area was decorated with Confederate flags and red, white and blue bunting, and the strains of Dixie and other southern songs filled the air as southern belles, dressed in Confederate caps and appropriate costumes, mingled throughout the plant and handed out big red apples. In the photo at the left is shown the control room which was one of the main points of interest to visitors. Here an operator can control the equipment throughout the ammonia production area of the plant. In the center, employees wave from atop the first tank car of ammonia produced by Southern Nitrogen. Part of the plant, which will produce nitrogen manufacturing solutions, "Dixie" ammonium nitrate and other nitrogen products, may be seen in the background. At the right visitors and employees look over the first tank car of ammonia produced at the plant. A story of the start of production at the new facility appeared on page 1 of the Feb. 2[illegible] issue of Croplife.

Fertilizer, Lime Use Stressed at Dealers Meetings

KNOXVILLE—Better fertilizer management, more lime and more concern with approved seed varieties were subjects highlighted during the series of fertilizer and seed dealer meetings, held in Tennessee during February.

Judging by attendance, the meetings were the most successful since the series began. There was a great deal of attention paid to indicated future trends. R. C. Harnden, Chapman Chemical Co. executive, spoke on trends in fertilizers and insecticides.

Two authorities discussed lime. W. L. Parks, associate University of Tennessee agronomist, pointed out the increasing lag in liming during recent years. M. S. Williams, chief economist, National Plant Food Institute, linked lime with fertilizer use.

Other phases of all four meetings were a discussion on field crop varieties by Dr. William Bishop, University of Tennessee associate agronomist; and a county seed and fertilizer program. This latter was in the form of a panel discussion, led by Jakes R. Turner, agronomist with the Pacific Coast Borax Co.

The meetings were held in Nashville, Greeneville, Athens and Jackson. While agriculture varies in the different areas, basic fertilizer problems were pretty much the same.

There was a general recognition of the need for more lime applications, of responsibility in the insecticide field, particularly with systemic poisons, and for all encouragement possible in obtaining greater use of recommended seed varieties.

Presiding over all meetings was L. C. Jacobs, superintendent, division of feed, seed and fertilizer, Tennessee Department of Agriculture.

James B. French Heads California Aircraft Group

FRESNO, CAL.—New officers of the Agricultural Aircraft Assn., named at the recent seventh annual convention of the group, are James B. French, Bakersfield, president; James K. Vedder, Imperial, vice president, and Milton B. Watts, Woodland, secretary-treasurer.

Also elected were Milton B. Watts and George H. Baldrick, both as directors, and Nick Moller and Dale Fry, as alternate directors. William D. Austin is executive secretary of the association.

About two dozen suppliers exhibited at the convention, and there were six airplanes on display.

Michigan Chemical Profit Up from 1955

SAINT LOUIS, MICH.—The 1956 annual report to stockholders of Michigan Chemical Corp. showed an operating profit of $356,402 after an allowance of $55,000 for federal income taxes. The net profit was $0.66 a share on the average number of shares outstanding, compared with the 1955 profit of $341,314, or $0.64 a share, which includes $0.19 a share from non-recurring income. Sales were $6,640,796 for the year compared with $6,526,275 sales in 1955.

Depreciation increased from $383,753 in 1955 to $447,520 in 1956, and capital investment in added plant and improvement in 1956 was $1,787,695, against $194,051 in 1955. At the year end, unexpended balances for approved capital projects totaled $1,360,000; working capital stood at $4,901,786.

Sucking Insects Head List of 10 Worst Pests in Arizona

TUCSON, ARIZ.—The lygus bug, the super plant bug and stink bug, all sucking insects on cotton, alfalfa, small grains, sugar beets and grain sorghums, were the number one pests during 1956.

This is the report of Dr. J. N. Roney, extension entomologist for the University of Arizona. He lists, according to their ability to destroy plants, the Arizona insects which did the most damage during the past year.

The cotton bollworm, corn earworm or tomato fruit worm, (all the same insect), was public energy number two last year.

The third most pesky insect was the cabbage looper, feeding on cotton, alfalfa, lettuce, broccoli, cauliflower and cabbage.

Dropping down to fourth on the list was the spotted alfalfa aphid. There was a big drop in the number of aphids during the last half of 1956.

Causing citrus shippers to install washers and reducing citrus yields throughout the state was the cottony cushion scale, fifth on the list.

Aphids cost farmers and home owners large sums of money during the year. This listing includes pea aphids, rusty plum aphids, pecan aphids, green peach aphids, cowpea aphids and cotton aphids.

The salt marsh caterpillar feeds on cotton, vegetables, alfalfa, soybeans and small grains, and ranked seventh because of the money spent by vegetable and grain growers erecting aluminum barriers.

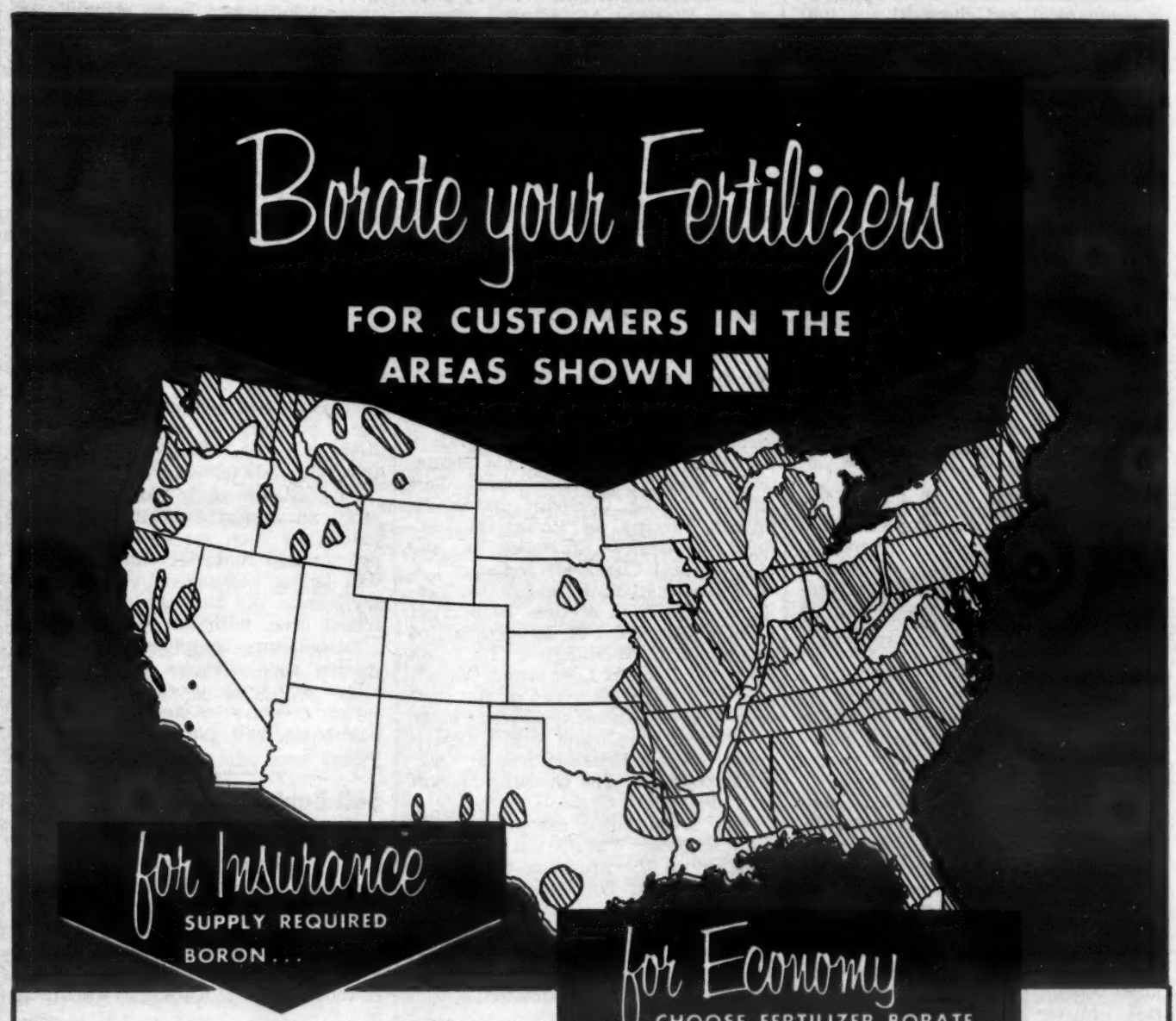
Grasshoppers—late hatchers in parts of Arizona—cost ranchers lots of money during the year and did extensive damage to the state's range grasses.

The lesser cornstalk borer has become a serious pest in Arizona. It feeds on corn, grain sorghums and soybeans.

Last on the list is the southwestern cornstalk borer which attacks corn and grain sorghums with no known control measures other than cultural ones.

Gerald J. Bayern Named To Grace Marketing Post

NEW YORK—W. R. Grace & Co.'s Research and Development Division has announced the appointment of Gerald J. Bayern as manager of market research. Mr. Bayern recently was senior market analyst for Allied Chemical and Dye Corp.'s Barret Division in New York. Earlier, he was assistant director of engineering for Foster D. Snell, Inc., and from 1950 to 1953 he was market analyst for American Cyanamid Co. Mr. Bayern was graduated from Columbia University in 1947 and received a MBA degree from Cornell University in 1950.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NAC SPRING MEETING

(Continued from page 1)

insects developing resistance to certain pesticides, pointing out that this has happened before and the answer is to be found in more extensive agricultural research.

In referring to promising new areas for pesticide control, the NAC president listed forest pests, turf pests, weed control programs, particularly along highways, and the control of termites and other household pests. He also referred to the expanding uses of soil fumigants to destroy nematodes and other soil pests.

Schools make a serious mistake when they train future scientists in highly specialized fields at the expense of giving them a broad, liberal education, Dr. Stanley B. Freeborn, provost of the University of California, Davis Campus, told the convention.

He declared that we are living in a mechanical and chemical age that becomes more dependent upon physics, chemistry and biological sciences every day we live. "Without disparaging any other subjects, it would seem evident that knowledge of the sciences is as necessary to the graduate in the field of letters as a basic introduction to literature is to the potential scientists," he said.

Dr. Freeborn blamed the current dearth of scientists on an "overpowering fear of mathematics and any allied subject" on the part of too many young people. He said that tests have proved that a majority of students entering college today are "mathematically illiterate," and urged improvement in the methods used in high schools to correct the situation.

Credit, skillfully administered for the convenience of customers, is a rich source of goodwill, friendship and loyalty, J. A. Walker, general credit manager of Standard Oil Company of California, said in a talk on "Credit for Agricultural Progress."

He pointed out that any successful credit program was dependent on five essentials — sound policy, sound administration, effective collection of receivables, healthy customer relations and a good management climate.

"A company must have a plan which will guide credit administrators around the pitfalls common in a credit business," Mr. Walker said. "Wise or unwise use of this plan can spell the difference between profitable or unprofitable credit administration."

He emphasized that longer terms, loose credit analysis or lax collection efforts were not the answers to a tough marketing situation.

"Suppliers must recognize that many customers are not skilled financial managers," he said. "Sound credit can contribute to the sales and profits of any business so long as this credit is properly managed and not abused. If it's abused, the supplier will suffer as well as the customer."

Banks make production loans based on carefully developed budgets, Earl Coke, vice president, Bank of America, San Francisco, said. He added that local bank managers in his company have been instructed to keep in mind that such budgets should include adequate provision for necessary fertilizer and pesticide treatments.

"In our bank," Mr. Coke said, "we do this by means of an operating budget worked out together by the farmer and a lending officer or agricultural field man. Each production expense is itemized and all potential income calculated."

Demand for agricultural credit is on the upswing, Mr. Coke told the meeting. The size of the average farm is getting larger and the need for capital is increasing. The average value of land and buildings per farm has increased four times since 1940, he said.

"Today the capital investment per worker is higher for agriculture than for any other important segment of our economy, and the farmers' need for money to meet operating expenses is higher than it ever has been before," he said.

C. O. Barnard, executive secretary of the Western Agricultural Chemicals Assn., San Jose, Cal., addressed the group and explained the workings of the west coast segment of the industry. He told of close association with the colleges and experiment stations in the states covered by the WACA, and expressed a desire for continued cooperation with the NAC on a national scale.

The program for March 7 comprised meetings of various association committees at the Fairmont, and a full agenda of speakers was scheduled for March 8, the final day of the meeting.

Under the chairmanship of Jack V. Vernon, Niagara Chemical Division, Food Machinery and Chemical Corp., Middleport, N.Y., vice president of the association, March 8 speakers included Fred C. Shanaman, president, Pennsylvania Salt Manufacturing Company of Washington, Tacoma, on "Return on Capital Necessarily Employed in the Agricultural Chemicals Industry"; J. T. Coyne, assistant head of the pesticide regulation section, Plant Pest Control Branch, U.S. Department of Agriculture, Washington, D.C., on "Making Federal Legislation Work"; and R. L. Furniss, chief of the division of forest insect research, Pacific Northwest Forest and Range Experiment Station, USDA, Portland, Ore., who spoke on "The Growing Market in Forest Pest Control."

Lea S. Hitchner, executive secretary of NAC, Washington, was final speaker on the program, with a report on "How NAC Serves the Industry."

A reception for members and guests of the association was held at the hotel the evening of March 6, courtesy of the association.

CONVENTION COVERAGE

Croplife's coverage of the National Agricultural Chemicals Assn. spring meeting is by Lawrence A. Long, editor of Croplife, Minneapolis, and Martin E. Newell, manager of Croplife's Southwestern office, Kansas City. Coverage of final sessions of the convention will appear in next week's Croplife.

Davison Launches Sales Program for Garden, Lawn Fertilizers

BALTIMORE — The Davison Chemical Co., division of W. R. Grace & Co., this year will introduce two products in the market for garden and lawn fertilizers, initially on a limited area basis.

Nurish, a water-soluble plant food for lawns, flowers, vegetables, ornamentals and greenhouses, will be offered in middle western cities in the spring of 1957. Wonder-Gro, a granulated fertilizer especially formulated for lawns and ornamentals, will also be promoted for the home fertilizer market.

Nurish is being produced in new facilities installed at Davison's Alliance, Ohio plant. The product is packed in 1 and 3 lb. polyethylene bags, and a 50 lb. polyethylene-lined paper bag is also produced, primarily for landscapers and nurseries. Besides a 20-20-20 formula of the primary plant foods, Nurish carries the all important trace elements of known value for plant growth, the firm said.

Wonder-Gro is being manufactured at Davison's plants in Columbus, Ohio, and Lansing, Mich., and marketed in 25 and 50 lb. bags. Its formula is 12-6-6, and it also carries the company's trade-marked 5 Star minor element mix.

W. N. Watmough, Jr., vice president in charge of Davison's Mixed Fertilizer Division, has organized a special products department to handle the home consumer items under B. C. Manker, the company's manager at Lansing. After this year, expansion into other markets is planned, extensively penetrating the areas in which Davison products for farm use are sold, and eventually reaching nation-wide extent.

For Nurish and Wonder-Gro in 1957, an intensive advertising campaign has been set up, plus dealer promotional material. Main reliance will be on newspapers with garden sections in the Midwest cities of the initial area, with some spot radio.

Distributors supplying seed and garden supply stores, hardware stores and large users such as nurseries, greenhouses and highway departments will handle these products.

Soil Bank Sign-Ups Top 16 Million Acres

WASHINGTON — As of Feb. 22 farmers had signed 665,396 agreements placing 16,155,230 acres in the soil bank acreage reserve. This included 2,164,126 acres of corn, 2,003,970 of cotton, 101,423 of rice, 55,255 of tobacco and 11,830,456 of wheat.

INSPECT CALSPRAY PLANT—California Spray-Chemical Corp., Richmond, Cal. hosted the field representatives of Agricultural Ammonia Service during a recent two day meeting in the San Francisco Bay area. Agricultural Ammonia Service is the exclusive distributor in the San Joaquin Valley and coastal counties of California for Ortho NH_3. The group shown, consisting of Agri-Serv plant managers and key personnel, was taken on an inspection tour through the new Calspray fertilizer plant in Richmond. The two day excursion at Richmond culminated with a banquet and entertainment. The banquet was hosted by Bill Jaqua, sales manager, and C. E. Cody, vice president of Calspray. The Agri-Serv delegation was headed by Fred M. Stewart, vice president and general manager of Agricultural Ammonia Service.

American Potash to Build Sodium Chlorate Plant in Mississippi

LOS ANGELES—American Potash & Chemical Corp. has announced plans to construct a $5,000,000 chemical manufacturing plant at Aberdeen, Miss., for the production of sodium chlorate.

Construction will start immediately at a 586-acre site on the Tombigbee River seven miles outside of Aberdeen, with completion scheduled for mid-1958. Initial production at the Aberdeen plant will be at the rate of 15,000 tons of sodium chlorate per year, with provision for possible expansion into other chemical fields.

The new facility marks AP&CC's first venture east of the Mississippi River for the manufacture of its Trona electrochemicals. The firm currently manufactures sodium chlorate at its Henderson, Nev., plant.

Michigan Pest Control Operators to Meet

EAST LANSING, MICH. — Specialists from Michigan State University and the Michigan Department of Health are listed as major speakers for the annual Michigan Pest Control Operators Conference at Michigan State University, March 21-22.

The program for March 21 offers these highlights: addresses on "Insects which Infest Cereals and Stored Products" by Gordon Guyer, "Insects and Rodents as Public Health Problems" by Oliver W. Kaufmann, and "Motivating People" by Paul Moore, all three of M.S.U.; "Handling and Using Insecticides Safely" by Dr. C. W. Muehlberg, of the Michigan Department of Public Health, and "FHA—Mortgages and Termites" by John W. Kirkwood, FHA official of Grand Rapids.

Speakers March 22 will include other M.S.U. experts — "Accounting for the PCO" by Charles N. Lawrence, "Incidental Insect Pests" by Ray Janes, and "Structural Pests" by Richard C. Fox. Another March 22 speaker will be Ralph Heal, of the National Pest Control Assn., on both "Termite Control Guarantees" and "Insect Resistance to Pesticides."

J. R. Hoffman, of the entomology department, will be chairman for the sessions on March 21, and John Spyre, Royal Oak, for the second day.

Texas Area Asks for Soil Testing Laboratory

BIG SPRING, TEXAS — A movement to get a soils testing laboratory established at the Big Spring Field Station has been started by local agricultural leaders. Texas has two at present, one at College Station and another at Seymour. With the growing popularity of soil testing, people feel that one in this area is needed.

The growing use of soils laboratories is reflected by figures released from College Station, which show that soil samples are running well ahead of last year. At Seymour, R. L. McClung, Baylor county agent, said 151 samples were received in January. During 1956 the state laboratory at College Station handled 9,755 soil samples, according to M. K. Thornton, extension agricultural chemist.

Both men report that interest continues to grow in soil testing work, and give as the reason the great need of increasing per unit output in order to cut production costs. Mr. McClung points out that where farmers applied fertilizer as recommended by the laboratory, they increased lint cotton by as much as 200 lb. per acre.

West Texas farmers believe that in the irrigated areas, soil analysis and proper fertilization would give an equal increase in yields.

Erhart K. Drechsel

Erhart K. Drechsel Joins Escambia; A. Wohlwend Named Vice President

NEW YORK—Erhart K. Drechsel has joined Escambia Chemical Corp., it was announced recently by A. N. Wohlwend, vice president and director of commercial development. He will be located at company headquarters, 261 Madison Ave., New York City, and will devote full time to commercial development activities.

Mr. Drechsel joins Escambia Chemical from American Cyanamid Co. where he was a product manager in its new product development department. Prior to this, he was a senior market analyst in Cyanamid's market research department and had spent a number of years as a research chemist in the Stamford research laboratory. Mr. Drechsel holds an A.B. degree from Drew University and an M.S. from Syracuse University.

Mr. Wohlwend was appointed vice president by the board of directors at the meeting held on Feb. 26, it was announced by R. U. Haslanger, president.

Mr. Wohlwend joined Escambia last year. For many years he has been associated with the chemical industry in production, sales, market research and development.

Escambia Chemical is now producing ammonia, nitric acid, ammonium nitrate, fertilizer solutions and polyvinyl chloride resins at its plant in Pensacola, Fla. Construction is now under way at the same site for a methanol plant to be completed later this year.

D. S. Parham in AACCO Production Post

NEW YORK—D. S. Parham has become responsible for all production activities of the American Agricultural Chemical Co., exclusive of the phosphate rock mines, as general superintendent of production, it was announced recently. The new responsibility includes supervision of chemical and elemental phosphorus production in addition to fertilizer production.

W. H. Phillips, formerly the company's Detroit, Mich. sales office, has accepted responsibility as assistant manager of the Cincinnati, Ohio sales office.

Mosquito Control Bill

WASHINGTON—Rep. H. A. Dixon (R., Utah) has introduced a bill in the House which would provide for an annual federal appropriation of up to $3 million for mosquito research and control. The program would take the form of grants, research and technical assistance by the Department of Health, Education and Welfare to other federal agencies and to state and local public health organizations.

Gloomicides

Wife: "Goodness, George, this is not our baby. This is the wrong carriage."

Hubby: "Shut up. This is a better carriage."

★

Schoolboy in geography class: "The principal export of the U.S. is money."

★

"How long did it take your wife to learn to drive a car?"

"It will be 10 years this fall."

★

Hubby: "The bank has returned that check."

Wife: "Splendid! What can we buy with it this time?"

★

A little boy was making his way to his desk when the teacher stopped him. "You're late, Tommy," she said. "Why?"

Tommy looked a bit tearful. "It was late when I left home," he said.

"But why didn't you start earlier?" the teacher inquired.

"Because," said Tommy, astonished, "it was too late to start early."

★

A lad from Brooklyn turned up in a mess line in a Texas camp, holding the rattles from a rattlesnake.

"Where'd you get 'em?" a buddy asked.

"Off a big woim."

★

"Gentlemen," cried the election candidate, "we need some one to win this office by the biggest majority ever known. Who is it?"

From the back of the hall came the quick retort: "A different candidate!"

★

A man telephoned the police to report that thieves had been at work on his car.

"They've stolen the steering wheel, the brake pedal, the accelerator, the clutch pedal and the dashboard," he complained.

A police sergeant said he would investigate. Then the telephone rang again.

"Don't bother," said the same voice—this time with a hiccup. "I got into the back seat by mistake."

★

A bachelor left in charge of his infant niece was faced with a crisis. He frantically called a young acquaintance, a parent, who solved the problem in this man-to-man fashion:

"First, place the diaper in position of a baseball diamond with you at bat. Fold second base over home plate. Place baby on pitcher's mound. Then pin first and third to home plate."

★

The minister was lecturing to a class about keeping their minds as clean as their bodies. To emphasize the point, he held up a bar of soap.

"Oh, oh," said one little listener, "here comes the commercial."

★

Visitors were being shown around the battleship that had just arrived in port. The guide paused before a bronze plaque on the deck and with bowed head, said, "This is where our gallant captain fell."

"Well, no wonder," said one nervous old lady. "I nearly tripped over the darned old thing myself!"

★

"Good morning, madam. I'm from the gas company. I understand there's something in the house that won't work."

"Yes, he's upstairs."

TROPHY PRESENTED—This Smith-Douglass Co. trophy was awarded employees of the Coronet Phosphate Co. for attaining the highest rating for the year in a country-wide safety contest and in recognition of their contribution to safety and accident prevention. Admiring the trophy are, left to right, W. H. Taylor, general superintendent of Coronet; Vernon S. Gornto, safety director for Smith-Douglass Co.; R. M. Wilbur, general manager of Coronet, and Gaither Newnam, safety director at Coronet.

Smith-Douglass Safety Trophy Goes to Coronet Phosphate Co.

NORFOLK, VA.—The Ralph B. Douglass trophy was awarded to the employees of the Coronet Phosphate Co., a division of the Smith-Douglass Co., Inc., for its outstanding safety record for 1956. The bronze trophy was presented by Vernon S. Gornto, safety director of Smith-Douglass during a monthly meeting of the safety committee. R. M. Wilber, manager of the Coronet division, accepted the trophy on behalf of the employees.

The 12 plants of Smith-Douglass compete for the award. Gaither Newnam, safety director of Coronet, said he was proud of the record set and especially of the employees of the Tenoroc mine near Lakeland who have worked 1,200,000 man hours without a lost-time accident.

The Coronet Phosphate Co. was acquired by Smith-Douglass in 1952 and the present safety program was organized under the supervision of Mr. Gornto in 1953 with B. J. Phillips as safety director. It was reported that from 1945 through 1951 the average accident frequency rate was 44.34 and in 1952 was up to 59.47. Under the safety committee composed of workers, supervisors and management, the accident frequency was considerably reduced until by 1956 it was 2.57.

Last year's safety committee was composed of Mr. Newnam, W. H. Taylor, J. L. Wester, J. J. Lewis, W. A. Kirkland, N. L. Snow, Jr., Paul Bennett, Julius Procchi and Fred Gaige. Comprising the committee for 1957 are Leonard Jones, Freddy McCullers, Paul Bennett, Harry Hickman, J. J. Lewis, Bob Stockton and W. H. Taylor.

In recognition of the safety record of two years without a lost-time accident, employees of Tenoroc mine and their families were honored at a barbecue supper. For the year 1955 the National Safety Council awarded the mine a plaque in recognition of its accomplishments in the field of mine safety.

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SURVEY INDICATES . . .

Farmers Expect to Maintain Fertilizer Use

In years gone by, fertilizer sales always followed quite closely the curve of general farm income. When income was up, so were fertilizer sales, and vice versa. Now, with that pattern apparently broken, the next question in the minds of industry leaders is what will the farmer's attitude be this season, with agriculture still occupying the uncomfortable middle role in a squeeze play.

The industry enters the 1957 season with plenty of plant food to sell, and the capacity to satisfy a heavy demand, so the question at the back of everyone's mind, concerns the potential demand for 1957.

A Purdue University survey made recently gives some insight on this problem, although it of course makes no pretense of having a complete answer. Prof. Vernon W. Ruttan of the department of agricultural economics set out to obtain a better understanding of how fertilizer is marketed and priced in Indiana; the effectiveness of the different marketing methods; and the impact which new technology in fertilizer manufacture can be expected to have on trends in fertilizer marketing.

The survey asked the farmers in three counties what they would do about their purchases of plant food if the price of fertilizer should stay the same and the prices of things farmers sell should drop by 5%. They were then asked what their reaction would be if the price of fertilizer should go up by 10% and the prices of things farmers sell should stay the same.

Dealers in the same area were also asked how they would expect farmers to react to these same economic changes outlined in the questions put to farmers.

Replies to the questions indicated that the farmers would continue for the most part to purchase about the same amounts of plant food as they did during the current year. Dealers, however, were not quite so optimistic about what the farmers' reactions would be. While 72% of the farmers indicated they would make no change in fertilizer purchases if their market prices should drop by 5%; only 58% of the dealers said they would expect no change in the farmers' purchases.

Somewhat the same pattern was seen in the proportion of farmers as compared to dealers who thought the fertilizer volume would decrease. Only 21% of the farmers said they would purchase less fertilizer than before, while 42% of the dealers indicated they would expect their customers to cut down on their purchases of plant food.

A small portion of the farmers, 7%, said they would increase their purchases, despite a drop in their incomes. On this score, the dealers appeared to doubt completely that there would be any increase at all.

When the situation was one in which farm income would remain the same and the price of plant food should rise by 10%, the dealers were considerably more pessimistic about the way farmers would react. Only 39% of the dealers thought that this situation would bring no change in fertilizer volume, while 72% of the farmers said it would make no difference; that they would continue to purchase plant food in the same volume as before.

Would there be a decrease in tonnage if fertilizer prices were to advance 10%? Some 56% of the dealers thought so, while only 21% of the farmers indicated that they would cut down on their purchases under these circumstances.

The same 7% of the farmers said they would increase their fertilizer purchases despite an advance in price, while 6% of the dealers agreed that this would be the case.

In commenting on the summary of results of this portion of his survey, Prof. Ruttan says that "There can be little doubt that in the past, at least, dealers have had ample justification for their expectation that farmers' expenditures for fertilizer is closely related to changes in their income. Prior to 1947, farm income and fertilizer use were very closely related in both Indiana and the United States as a whole.

"There can be little doubt, however, that between 1947 and 1954, the old pattern of relationship between farm income and fertilizer use, however calculated, no longer exists. As farm income has leveled off, fertilizer use has continued to expand. The leveling off of fertilizer consumption in the past year or so, however, may indicate emergence of a new relationship between fertilizer use and farm income. It is too early, however, to do more than speculate on this matter.

"There is evidence, however, indicating that most farmers are right in believing that it does not pay to make substantial changes in fertilizer use in response to price changes of the magnitude suggested in our questions."

The Purdue professor then presented an estimated response for 4-16-16 fertilizer applied in the row on land which would yield about 60 bu. corn an acre in the absence of fertilizer. Figuring from the basis of corn at $1.20 a bushel and the 4-16-16 at $3 per hundred, or $60 a ton, it worked out that the best level of application lies somewhere between 200 and 300 lb. an acre. At 200 lb., the additional net income is $3, but at 300 lb. the addition to net returns is 60¢ less than the $3 spent for the last 100 lb. of fertilizer.

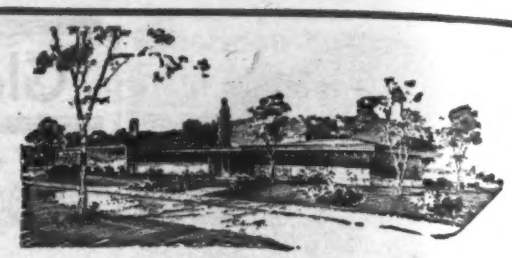
How would it work out if the price of corn were to remain the same, but the cost of fertilizer were to rise? With the price of fertilizer now set at $67 a ton, this raises the price of the plant food about to the level it is when purchased on credit, Prof. Ruttan observes. No change in the level of fertilizer application is indicated as a result of this change in fertilizer price," he concludes.

The third situation would be one in which the price of corn were to drop to $1.10 a bushel, and the fertilizer price would be at the $60 a ton level as first indicated. According to the agronomic charts, the same level of fertilizer application would apply to gain a maximum return here, too.

"Thus, our calculations tend to support the views of those farmers who believe they should not change their fertilizer application levels in response to price changes of the magnitude suggested in our question," the report states. "Only those farmers in our study area who are already using applications of over 300 lb. of fertilizer an acre should consider changing their application levels in response to price changes in the 5%-10% range.

"This conclusion is not necessarily inconsistent with the expectation of fertilizer dealers that farmers would reduce their application rate following a decline in farm income," Prof. Ruttan adds. "When subjected to heavy financial pressure or faced with substantial price risks, farmers may react in a manner that is not consistent with their beliefs about how they should act."

The Purdue study is continuing, Prof. Ruttan says, and further results may shed more light on this intriguing subject. Meanwhile, the fertilizer industry will continue in its efforts to keep fertilizer sales at a high level by convincing the farmer that there is no economy in cutting his plant food applications, unless, of course, he is already using the optimum amount. And of these, there just aren't many!



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MEETING MEMOS

March 12-13—Chemical Market Research Assn., Sheraton Hotel, Philadelphia.

March 26-28—Council for Agricultural and Chemurgic Research, Congress Hotel, Chicago.

May 20-22—Chemical Specialties Manufacturers Assn., Drake Hotel, Chicago.

EDITOR'S NOTE—The listings above are appearing in this column for the first time this week.

March 12-13—Missouri Aerial Applicators Short Course, University of Missouri, Columbia, Mo.

March 13-15—New Jersey Mosquito Extermination Assn. 44th Annual Meeting, Hotel Haddon Hall, Atlantic City, N.J., Dr. Bailey B. Pepper, Rutgers University, Secretary.

March 14-15—Oregon Feed & Seed Dealers Assn., Annual Meeting, Multnomah Hotel, Portland, Ore.; March 14 Morning Program Set Aside for Fertilizer Topics.

March 27-29—North Central Branch of Entomological Society of America, Annual Meeting, Des Moines, Iowa.

April 2—Western Agricultural Chemicals Assn.; Spring Meeting, Hotel Biltmore, Los Angeles, Cal.; C. O. Barnard, 2466 Kenwood Ave., San Jose 28, Cal., executive secretary.

April 8-10—National Institute of Animal Agriculture, Seventh Annual Meeting, Purdue University, Lafayette, Ind.

April 14-15—Fifth Annual California Fertilizer Conference, Fresno State College, Fresno, Cal. Sponsored by California Fertilizer Assn., Sidney H. Bierly, General Manager, 475 Huntington Drive, San Marino 9, Cal.

May 13-15—Carolinas-Virginia Pesticide Formulators Assn., Third Annual Spring Convention, Cavalier Hotel, Virginia Beach, Vt., W. R. Peele, Raleigh, N.C., Secretary-Treasurer.

June 9-12—National Plant Food Institute, annual meeting, Greenbrier Hotel, White Sulphur Springs, W. Va.

June 17-19—Fifteenth Annual Convention of the Association of Southern Feed and Fertilizer Control Officials, Dinkler-Tutwiler Hotel, Birmingham, Ala., Bruce Poundstone, Kentucky Agricultural Experiment Station, Lexington, Ky., Secretary-Treasurer.

June 23-26—American Society of Agricultural Engineers, Golden Anniversary meeting, Michigan State University, East Lansing, Mich.

June 26-28—Eighth Annual Fertilizer Conference of the Pacific Northwest, Benson Hotel, Portland, Ore. R. R. Bertramson, Washington State College, Pullman, Wash., chairman.

July 10-14—Plant Food Producers of Eastern Canada, Manoir Richelieu, Murray Bay, Quebec.

July 17-19—Southwestern Fertilizer Conference and Grade Hearing, Galvaz Hotel, Galveston, Texas.

Oct. 2-4—Eleventh annual Beltwide Cotton Mechanization Conference, Shreveport, La.

Nov. 3-5—California Fertilizer Assn. 34th Annual Convention, St. Francis Hotel, San Francisco. Sidney H. Bierly, General Manager, 475 Huntington Drive, San Marino 9, Cal.

Dec. 11-13—Agricultural Ammonia Institute, Seventh Annual Meeting, Hotel Marion, Little Rock, Ark., Jack F. Criswell, Claridge Hotel, Memphis, Executive Vice President.

1958

Jan. 13-15, 1958—Weed Society of America and Southern Weed Conference, joint meeting. Peabody Hotel, Memphis, Tenn.

Pacific Northwest Wheat Growers Have $5 Million Smut Loss

PORTLAND — Smut, the black fungus that continues to be public enemy No. 1 to Pacific Northwest wheat growers, claimed a $5 million tribute again in 1956 from the area's grain farmers.

The dollar deficit, the same as in 1955, was added up in production losses, dockage by the grain trade, and washing charges on the 25 million bushels of smutty wheat. For the first time Walla Walla challenged the Palouse for the dubious title of smut capital of the country.

In 1956 26.7% of the wheat in Washington, Oregon and Idaho graded smutty, a decrease of 7.3 percentage points from 1955. Although fewer fields smutted this year, monetary loss equalled the 1955 toll because infestations were more severe where they did occur.

These facts and figures on the 1956 smut situation were reported by Dr. C. S. Holton, Pullman, Wash., U.S. Department of Agriculture plant pathologist stationed at Washington State College. Dr. Holton presented his report to a regional extension smut-control committee composed of USDA and land grant college plant pathologists and representatives of the grain trade at a meeting in Portland.

A USDA grain division report was made at the meeting. It differed from Dr. Holton's report by 3.6 percentage points. It showed that 30.3% of the sample inspections of wheat grown in Washington, Idaho and Oregon graded smutty. The grain division report at Portland is compiled from records of handlers who sample each grower's consignment, but it does not indicate the number of bushels in each sample.

Both reports show that smut conditions were worse in Washington and Idaho than in Oregon. In Dr. Holton's survey, the Walla Walla area led all the rest in smut incidence with 42.5% smutty wheat. The Palouse was a close second with 38.6%, down 24.4 percentage points from 1955's 61%. The Lewiston area was third with 35.3% smut followed by Pendleton with 34.2%. Spokane had 14.7% smut; the Dalles, 6.5%, and the Lind area, 3%.

The USDA percentages, which vary from Dr. Holton's because of the nature of the sample, are as follows: Colfax area, 47% smutty; the Lewiston area, 38.3%, the Pendleton area 37.9%; Walla Walla area, 31.5%, and the Spokane area, 29.7%.

By states, Idaho, second in total wheat production with almost 39 million bushels, had the highest percentage of smut—34.9% in Dr. Holton's sample. Washington, with the highest wheat production of the three states, almost 60 million bushels, was second with 26.1%. Oregon, with almost 26 million bushels of wheat, was third in both production and smut percentage—23.4.

FLORIDA TONNAGE

TALLAHASSEE, FLA.—Florida fertilizer tonnage during January totaled 195,162 tons, according to the Florida Department of Agriculture. This included 144,293 tons of mixed goods and 50,869 tons of materials.

Henry Meyerhoff

Reception Honors Henry Meyerhoff

KANSAS CITY—Business associates and other friends of Henry W. Meyerhoff were guests at a reception in his honor at the Town House, Kansas City, Kansas, recently, marking his retirement as manager at Kansas City for the Fulton Bag & Cotton Mills. Mr. Meyerhoff will remain with Fulton on a part time basis as management consultant and will continue to service some of the company's accounts with which he has long been associated.

Last November Mr. Meyerhoff completed 53 years with the Fulton company. He began this association in St. Louis in 1903 at the age of 17 as an order clerk with a salary of $9.25 per week. He was promoted to chief clerk and later assistant sales manager of the St. Louis branch. In 1923 he was sent to Kansas City to take charge of the sales office here and in 1928, when Fulton established a bag factory in Kansas City, Mr. Meyerhoff was appointed manager.

DUTCH ELM DISEASE

AMHERST, MASS.—Dutch elm disease, first discovered in Massachusetts in 1941, now is found in 334 of the state's 351 towns.

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ARKANSAS APPOINTMENTS

FAYETTEVILLE, ARK.—Dr. Joseph L. Keogh has been named assistant agronomist at the University of Arkansas branch soil testing and research laboratory at Marianna. He will test soil samples, write fertilizer recommendations and carry on research. New graduate assistants on the university's staff include Leon Moore, who will assist with research in entomology under a grant from the Hercules Powder Co., and Homer A. Brady, who will work in the agronomy department under a grant from the American Potash Institute.

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